
APPENDIX B

RESUMES OF CQC PERSONNEL

Richard B. Beach
Theodore L. Blackburn, C.S.P., C.E.T.
George M. Crawford, Jr., CIH
Richard A. Delano, P.E.
Lee R. dePersia, P.E.
John W. Hammond, P.E. DEE
Joel S. Lindsay, P.E., L.S.P.
Joseph D. Mastone
Richard A. McGrath
Roberto Rico
Kelly Muir Spittler
John W. Thorsen, P.E., DEE
Joseph S. Wasiuk, P.E.
Richard M. Zoppel

RICHARD B. BEACH

Qualifications Summary

- Over 25 years of experience expanding environmental practices, developing risk management and QA/QC programs, and providing environmental consulting services.
- Sixteen years of experience managing HTRW, cradle-to-grave, environmental projects, including 8 CERCLA/SARA sites, and 4 RCRA sites in EPA Region I.
- Five years of experience working on PCB river contamination projects.
- Thirteen years of experience working on cost reimbursable projects.
- Managed, directed, and conducted projects and programs in hazardous materials management, remediation services, site investigations, litigation support, and compliance audits.
- Project experience includes RCRA and Superfund sites, USTs, PCBs, asbestos and lead, petroleum hydrocarbons, solvents, and ambient and indoor air concerns.
- Experience with CERCLA, RCRA, EPA standards for USTs, RI/FSs under CERCLA. Also works daily under the MCP.

Fields of Competence

Environmental management/consulting services; quality assurance/quality control (QA/QC) program development; extensive sampling and polychlorinated biphenyl (PCB) analysis experience; knowledge of PCB soil and sediment contamination on Superfund river sites; experience as a U.S. Environmental Protection Agency (EPA) contractor and familiarity with New England environments; litigation-level knowledge of toxicology and ecological impacts of contamination; Superfund project management; and risk management skills.

Credentials

M.S., Chemical Oceanography—University of Rhode Island (1981)
B.S., Biology (Marine emphasis)—College of Charleston (1974)
Tools for Sustainability Workshop, EPA (1999)
EPCRA/TRI (Toxic Release Inventory) Reporting, EPA (1998, 1999)
40-Hour HAZWOPER, OSHA 29 CFR 1910.120(e)(3) (1987)
8-Hour Hazardous Waste Refresher Training, OSHA 29 CFR 1910.120(e)(8)
Portable Gas Chromatography, Sentex Sensing Technology (1990)
Gas Chromatography, American Chemical Society (1984)
SCUBA Instructor, NAUI #6180 (1981)

Employment History

1999-Present	WESTON
1994-1999	AECOM-CTE Engineers
1989-1994	Hydrosystems
1986-1989	Versar, Inc.
1983-1986	Thibault & Associates
1976-1983	University of Rhode Island
1974-1983	Independent Contracting Services

Key Projects

GE/Housatonic River Project, Pittsfield, MA, EPA and U.S. Army Corps of Engineers (USACE), Operable Unit (OU) Manager. Manages all cost, schedule, and technical quality of

Key Projects (Continued)

task orders related to the Rest of River, including coordinating the multidisciplinary program of biological, chemical, and physical investigations. Technical liaison with EPA Project Manager to coordinate investigatory programs. Work is being conducted in full compliance with all federal, state, and local regulations.

Member of the team that is conducting the study of the 55-mile reach of the Housatonic River, which includes ecological and human risk assessments, site characterization, and the development of a state-of-the-art 3-D model simulation of the river. As the Technical Lead for the project, integrated and refocused technical programs to maximize investigative results, minimize project costs, and reduce the need for subsequent study activities. Integrated internal technical strategy meetings and external peer-review meetings to effectively focus available resources and technical inputs. Developed ongoing strategy to minimize analytical sampling of PCBs and congeners in co-located areas of interest in the river to reduce costs and maximize shared information between contractors. Identified and developed remediation monitoring system to evaluate potential PCB releases impacting the Rest of River. Developed a team approach to the identification of the most contaminated areas of the site and their impacts to the ecosystem that resulted in the identification of PCBs in ducks occurring at levels 200 times the Food and Drug Administration (FDA) criteria and a subsequent EPA public notification of the hazard along the East Coast.

Business Development, Various Locations, Multiple Clients, Director, Environmental Consulting. Provided strategic planning, evaluation of initiatives, presentations, and sales/marketing support for the development of industrial and government clients to help expand environmental services to \$33 million per year, a 35% annual increase during 1994-1996.

Risk Management Program, Washington, DC, AECOM Technology Corporation, Director, Environmental Consulting. Improved risk minimization/mitigation practices for the \$600 million AECOM Corporation and ensured environmental insurance coverage at acceptable premiums. Activities resulted in \$1 to 2 million annual savings in premiums. No environmental claims have been filed in spite of \$85 million of cumulative environmental revenues in new market areas over a 5-year period.

Information Resources and Computer Technology, Washington, DC, AECOM Technology Corporation, Director, Environmental Consulting. Initiated a resource program to collect, edit, and electronically disseminate information related to client development, technical issues, and regulatory concerns.

Project Consulting, Various Locations, Multiple Clients, Consultant.

- Identified responsible parties and successfully supported legal actions for their inclusion in the \$100+ million PCB cleanup of the 85-mile long Kalamazoo River Superfund site. Evaluated remedial investigation/feasibility study (RI/FS) information collected over a 10-year period, assessed the validity of a multiple Aroclor analytical technique on weathered sediments, and reviewed records from four industrial facilities, related RI/FSs, human health risk assessments, and 65 depositions to determine possible contributions from each site. All four of the facilities were incorporated into the cleanup action.

Key Projects (Continued)

- Developed new client and established technical defense for legal proceedings following a 6-million-gallon coal slurry release into a 75-mile river segment. Evaluated ongoing aquatic and sediment toxicology studies and addressed potential impacts to endangered species and the river ecology. Reviewed advanced analytical results of alkane and polycyclic aromatic hydrocarbons (PAHs) designed to fingerprint potential sources. Helped reduce negotiating position by \$22 million. Expert testimony is expected.
- Developed model for CTE's initial PCB remediation management services to a national gas transmission pipeline company, which included proposal development, allocation of resources, staffing coordination, cost structure, and monitoring of project implementation for the \$2 million per year effort. Services were provided in accordance with a Consent Decree with EPA to clean up PCB-contaminated soils and groundwater in 13 states over a 10-year period.
- Established and developed \$225,000 project for the Federal Aviation Administration (FAA) to develop hazardous materials guidance documents. Created initial documents and trained personnel to develop new guidance.
- Solid Waste Assessment Test (SWAT)/Landfill Design Operations Plan (LDROP)—NAVFAC SWDIV. Managed the SWAT and LDROP projects (\$250,000 in services) for the San Clemente Island Landfill in California. Revised the scope of work to minimize regulatory demands of the U.S. Navy by proving the lack of groundwater and the lack of environmental contamination resulting from landfill operations. Currently developing an LDROP to allow the Navy to use solid waste transfers for the majority of trash, with the landfill serving as a minor disposal alternative.
- Litigation Services – Strategy Development/Expert Testimony. Evaluated ongoing study of river impacts and Freedom of Information Act (FOIA) responses from the U.S. Fish and Wildlife Service following a 6-million gallon coal slurry spill to determine appropriate legal defense strategy. Discovered technical weaknesses in prosecution evidence that will likely reduce settlement by \$15 million. Expert testimony is expected pending grand jury charges (felony, Clean Water Act [CWA] violations, natural resource damages, endangered species impacts).

Business Development/Technical Services Development, Sterling, VA, Hydrosystems, Vice President/Remedial Services Director. Directly assisted the President with corporate development, recruitment of technical personnel, overall staff guidance and support, and strategic expansion of environmental markets. Accomplishments include the expansion of the Sterling office from 4 to 40 employees and the advancement of technical marketing by authoring or contributing to 11 technical papers or conference presentations over a 2-year period.

- Founded and directed the Remedial Services Division for the research and development (R&D), and implementation of innovative biological, chemical, and physical technologies to remediate hazardous wastes (with a focus on PAHs and PCBs). Also responsible for health and safety concerns and wastewater permitting.

Key Projects (Continued)

- Established and directed an organics analytical laboratory with Superfund approval, a field analytical services group, a treatability laboratory, and a biotechnology department. Developed analytical screening methods for volatile organics, PAHs, and PCBs for use on federal and state-designated Superfund sites.

Emergency Spill Response Services, Various Locations, Multiple Clients, Project Manager. Initiated, managed, and conducted emergency spill response services for airport and industrial clients. Also directed an emergency assessment of a 9-mile long stream following a 750,000-gallon fuel spill and evaluated natural biodegradation of hydrocarbons using fingerprinting techniques during the remedial efforts.

Project Consulting, Various Locations, Multiple Clients, Project Manager.

- Project Manager for the completion of the L.A. Clarke RI/FS and remedial design (RD) during the transition of work to the remediation contractor. Responsibilities included client interface, resource allocation, program monitoring and reporting requirements, regulatory negotiations, and financial analysis under the \$6 million contract. Services included investigations of PAHs and solvents in soil, sediment, groundwater, surface water, and air as part of the feasibility/design studies and the related demolition/decontamination of the woodtreating facility. In addition, ecological health assessments of wetlands and local streams were determined and incorporated into risk assessments to establish appropriate soil cleanup standards.
- Directed, managed, or supported hazardous waste investigations. Authored Quality Assurance Project Plans (QAPPs), reviewed investigative information, and conducted data validation on railroad switch yards and former shredding/recycling sites contaminated with solvents, hydrocarbons, and PCBs.
- Supported an underground storage tank (UST) remedial program for a 45-acre apartment development during removal or closure of 12 USTs from the very hilly area. Provided staff coordination, equipment allocation, in-place cleaning, and treatment of petroleum-contaminated water.
- Managed the air pollution component of an Environmental Impact Statement (EIS) required by the IDB for a 50-mile highway expansion in Brazil.

Technical Services/Business Development, Various Locations, Multiple Clients, Project Manager/Environmental Specialist.

- Initiated data validation/QA program under EPA Region I contract with \$200,000 annual revenues to support RI/FS activities at seven Superfund (Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]/Superfund Amendments and Reauthorization Act [SARA]) and four Resource Conservation and Recovery Act (RCRA) sites. Developed protocols for evaluating standard and nonstandard analyses of volatile and semivolatile organic compounds (VOCs/SVOCs), PCBs, metals, and inorganics.

Key Projects (Continued)

- Developed and implemented field analytical program to analyze VOCs in soils, soil gas, and groundwater as part of site assessments for commercial clients and the U.S. Air Force (USAF).
- Established laboratory liaison program to coordinate and manage \$1 million per year of environmental analytical services in support of private and government clients.
- Developed model RCRA facility compliance program and conducted initial field assessments under contract to EPA Region IV Special Programs in Athens, GA. The program focussed on the sampling and analytical protocols using Superfund guidelines to evaluate permitted releases of volatile and semivolatile organics, PCBs, metals, and inorganics.

Project Consulting, Various Locations, Multiple Clients, Project Manager. Directed hazardous waste site assessments and investigations. Coordinated sampling and analytical activities and co-authored the Project Operations Plan (POP) and the QAPP for the RI/FS of the Peterson-Puritan Superfund site for EPA Region I. For another program, supervised and conducted several performance audit inspections (PAIs) of publicly owned treatment works (POTWs). Also provided oversight of EPA investigations of PCB contamination at automobile/scrap shredding and recycling facilities for the Industrial Scrap Recycling Institute (ISRI).

Business Development, Providence, RI, Thibault Associates/Multiple Clients, Laboratory Manager/Environmental Scientist. Managed and expanded environmental laboratory (including stack sampling services) to increase annual revenues 150% in 2 years from industrial clients and state agencies. Developed safety protocols and evaluated National Institute for Occupational Safety and Health (NIOSH)/Occupational Safety and Health Administration (OSHA) concerns internally and for clients. Successfully proposed a \$50,000 project with EPA Region I and Rhode Island Department of Environmental Management (DEM) to monitor metals in clams from Narragansett Bay.

Project Consulting, Various Locations, Multiple Clients, Laboratory Manager/Environmental Scientist.

- Managed and authored the water quality component of the EIS for the \$2 billion expansion of the Boston Wastewater Treatment Plant (WWTP).
- Developed and modified analytical methods using gas chromatography (GC), atomic absorption (AA), ultraviolet visible (UV-vis) spectrophotometry, total CHN analyzers, and autoanalyzers. Established standard protocols for laboratory operations and trained personnel to perform analyses for chlorinated volatile organics and PCBs.
- Developed a successful technical defense for a potentially responsible party (PRP), conducted supportive studies, and provided expert testimony in the \$60 million Picillo Pig Farm Superfund case.

Key Projects (Continued)

- Reviewed cyanide results of wastewater samples analyzed by the local sewer authority, and provided expert testimony to successfully defend a metal finishing company against penalties and fines.
- Evaluated sampling and analytical information on metals and cyanide and provided testimony for a jewelry company to validate their National Pollutant Discharge Elimination System (NPDES) reports and confirm their facility compliance.

Pollution Assessment—Oil, Sewage, and Fertilizer Impacts, Narragansett, RI, University of Rhode Island, Marine Research Specialist. Developed, directed, and managed the inorganic geochemistry component of an 8-year \$15 million multidisciplinary ecological/toxicology program to evaluate the rates, routes, and reservoirs of nutrients in large-scale experimental ecosystems and in Narragansett Bay.

Analytical Method Development/Research Services/Litigation Services/SCUBA Training, Various Locations, Multiple Clients, Independent Consultant. Projects were as follows:

- **Analytical Method Development.** Developed analytical methods for trace metals and nutrients in fresh water, estuarine, and marine environments.
- **Oceanographic Research Services.** Provided shipboard and land-based analytical services for oceanographic research investigations, including geochemical sedimentary studies for seabed disposal of decommissioned nuclear submarines.
- **Litigation Services.** Assessed underwater environmental conditions and provided expert testimony in support of corrosion studies to date a firearm in a murder trial.
- **Research Diving (SCUBA) Instructor (NAUI #6180).** Trained scientists to perform underwater research and supported research projects at the University of Rhode Island.

Publications and Presentations

Beach, R.B. and L.R. Silka. 1992. "Remediation of Lagoon Sludge Using Rapid Results from an On-Site Laboratory." In: *Proceedings of HMC/Superfund '92*, Washington, DC, HMCRI.

Hartz, A.A. and R.B. Beach. 1992. "Cleanup of Creosote-Contaminated Sludge Using a Bioslurry Lagoon." In: *Proceedings of HMC/Superfund '92*, Washington, DC.

Beach, R.B. and L.R. Silka. 1992. "Alternative Approaches to Improve Site Investigations." In: *Proceedings of Federal Environmental Restoration '92 Conference*, Vienna, VA, HMCRI.

Beach, R.B., K.M. West, L.R. Silka, M.D. Albertson, and A. Gilchenok. 1991. "A Screening Method for Total Polynuclear Aromatics." Presented at Fourteenth Annual EPA Conference on the Analysis of Pollutants in the Environment, Norfolk, VA.

Tremaine, S.C., P.E. McIntire, and R.B. Beach. 1991. "Comparison of Best Available Technologies: Creosote Biodegradation." In: *Proceedings of Hazardous Materials Control/Superfund '91*, Washington, DC, HMCRI.

Publications and Presentations (Continued)

Heggie, D., C. Maris, A. Hudson, J. Dymond, and R. Beach. 1987. "Organic Carbon Oxidation and Preservation in Northwest Atlantic Continental Margin Sediments." In: *Geology and Geochemistry of Abyssal Plains*, Geological Society Special Publication No. 31.

Beach, R.B. 1983. "Nutrient Standing Stock." In: *Manual of Biological and Geochemical Techniques in Coastal Areas*. Marine Technical Report 86. University of Rhode Island, Narragansett, RI.

Beach, R.B. 1983. "Total Carbon and Nitrogen in Filtered Particulate Matter." In: *Manual of Biological and Geochemical Techniques in Coastal Areas*. Marine Technical Report 86. University of Rhode Island, Narragansett, RI.

Beach, R.B. and G.S. Douglas. 1983. "Pore Water." In: *Manual of Biological and Geochemical Techniques in Coastal Areas*. Marine Technical Report 86. University of Rhode Island, Narragansett, RI.

Beach, R.B. 1981. "Phosphorus Uptake and Release by Sediments from Narragansett Bay." Presented at Joint National Meeting, American Geophysical Union—American Society of Limnology and Oceanography. San Antonio, TX.

THEODORE L. BLACKBURN, C.S.P., C.E.T.

Qualifications Summary

- More than 19 years of experience in the environmental field.
- More than 18 years of experience in safety or environmental investigations, inspections, and site assessments and audits at both active and abandoned facilities and sites.
- More than 18 years of experience in training and accident investigations.
- Health and Safety Manager responsible for compliance in all aspects of health and safety, including: hazardous materials response operations, emergency response, construction safety, and hazard communication.
- Responsible for audits of WESTON field activities to ensure compliance with regulatory standards under 29 CFR 1926 and 29 CFR 1910, as well as WESTON policies.
- Responsible for training both WESTON and client personnel in the requirements of 29 CFR 1926 (Construction Industry Standards).
- Former Environmental Program Manager for multi-national manufacturing corporation.
- Former State Environmental Program Manager.
- Liaison with federal, state and local groups.

Registration

Certified Safety Professional (CSP), Board of Certified Safety Professionals (1990)
Certified Environmental Trainer (C.E.T.), National Environmental Training Association (1989)

Fields of Competence

Safety Program management, regulations compliance issues. Fixed facility and field-site OSHA compliance audits and inspections. Hazardous materials emergency response operations, environmental assessment, hazard assessment, health and safety monitoring. Photo-documentation and field quality assurance techniques, accident investigations. Certified trainer for OSHA construction courses. Certified environmental, safety and health trainer.

Credentials

B.S., Biology—Emporia State University (1978)
Occupational Safety and Health Administration (OSHA)
Construction Safety Instructor
Lecturer, Hazardous Materials Response Operations, West Chester University
National Environmental Training Association
American Society of Safety Engineers
National Safety Council
Safety and Health Council of New Hampshire
Certified Scuba Diver

Employment History

1987-Present	WESTON
1987	UNISYS Corporation
1982-1987	Arizona Department of Health Services
1980-1982	N.H. Water Supply and Pollution Control Commission
1979-1980	Arizona Department of Health Services

Key Projects

Health and Safety Activities, Various Locations, U.S. Army Corps of Engineers (USACE), New England District, and The Department of Defense, Health & Safety Technical Manager. Provided direction and technical assistance relating to Safety, Health & Environment (DSHE) contracts, including Rapid Response contracts.

Emergency Response Team Evaluation, New England, Confidential Client, Technical Manager. Assisted client in the evaluation of internal emergency response team capabilities, including assessment of training level, equipment needs and criteria necessary to augment and expand team capabilities.

OSHA Audits, Federal Aviation Administration Facilities in New England, U.S. Army Corps of Engineers, New England Division, Team Leader. Performed OSHA compliance audits at various FAA Air Traffic Control facilities. Activities included: on-site evaluation of various facilities, personnel interviews and report generation based upon guidelines established by Headquarters FAA and USACE.

Accident Investigation, New England, Confidential Client, Project Manager. Assisted client in Process Safety Management based accident investigation. The incident related to the uncontrolled polymerization and subsequent vapor release of waste materials which impacted off-site receptors. Activities included: determination of cause and effect of the incident, interviews with members of facility emergency response team, local fire department officers and management personnel, completion of attorney-client privileged investigation report outlining findings and recommended corrective actions.

Health and Safety Activities for Hazardous, Toxic and Radioactive Waste Program (HTRW), New England, U.S. Army Corps of Engineers, New England Division, Program Safety Manager. Responsible for health and safety oversight, health and safety planning, emergency/contingency planning, incident investigations and site inspections for multiple delivery orders under the Corps of Engineers New England Region, HTRW contract, including:

- Housatonic River, MA – RI/FS for PCB contamination;
- Long Island, ME – Remediation and demolition activities;
- Army Research Testing Laboratory (AMTL), MA – Remediation and decontamination activities to include reactive materials; and
- Raritan Arsenal – Remediation and decontamination activities to include explosive and reactive materials.

Health and Safety Training, Aurora, NC, Texasgulf, Instructor. Assisted in training site personnel in confined space entry and technical rescue at phosphate mining operation.

Health and Safety Training, Denver, CO, Rocky Mountain Arsenal, Instructor. Assisted in training site personnel in confined space entry and rescue prior to site remediation and demolition operations.

Key Projects (Continued)

Health and Safety Training, Aberdeen, MD, Aberdeen Proving Grounds, Instructor.

Assisted in training site personnel in confined space entry and rescue prior to remediation and demolition of NIKE missile vaults.

Multiple Construction and Remediation Projects, Various Locations, Multiple Clients, Health and Safety Manager and Project Safety Officer. Included a demolition and decontamination project of a former aerospace research and development firm in California where approximately 70 buildings on a 75-acre site were demolished; a major highway and bridge reconstruction project in Connecticut; the remediation of a decommissioned Air Force Base, which includes the removal of underground storage tanks, and design, construction, and operation of groundwater treatment plants; and investigation, assessment and remediation efforts for numerous DOD base realignment and closure sites.

Multiple Projects, Various Locations, Multiple Clients, Health and Safety Program Manager. Responsible for performance of corporate audits and inspections to verify compliance with EPA and OSHA regulatory requirements and corporate policy. Work sites have included U.S. Government installations, industrial facilities, refineries, and miscellaneous construction activities.

OSHA Compliance Training, Various Locations, Multiple Clients, Instructor. Assist with conducting training courses for OSHA compliance. Courses have included: hazardous waste operations, emergency response operations, confined space entry and technical rescue.

Drums Recovery, Mirror Lake, MA, U.S. Army Corps of Engineers, New England Region, HTRW Program Safety Manager. Under HTRW Program, served as Safety Manager for recovery of drums in a lake using SCUBA equipment.

Site Remediation, Barnum Road, MA, U.S. Army Corps of Engineers, New England Region, HTRW Program Safety Manager. Under HTRW Program, served as Safety Manager for remediation of a petroleum-contaminated site involving excavation and confined space entry operations.

Superfund Site Remediation and Construction, Charles George Landfill, Tyngsboro, MA, U.S. Army Corps of Engineers, New England Region, HTRW Program Safety Manager. As Safety Manager, oversaw safety during remediation and construction operations at this closed Superfund Site landfill. Project involved excavation, construction and operation of package groundwater treatment plant.

Site Remediation, Blue Beach, Boston, MA, U.S. Army Corps of Engineers, New England Region, HTRW Program Safety Manager. Provided program safety oversight during remediation of buried containers.

Corporate Safety Oversight and Inspection, Various Locations, U.S. Army Corps of Engineers, Corporate Safety Officer. Provided corporate safety oversight and inspection for numerous projects, including:

Key Projects (Continued)

- Aberdeen, MD: Site remediation with solvent, petroleum, explosive, chemical surety materials and mixed wastes. Activities included excavation, explosives clearance, construction and operation of groundwater treatment plant.
- Coal Creek, WA and Childersburg, AL: Activities included incineration remediation of sites contaminated with PCBs, solvents and metals.

Site Remediation Project Safety Management, Pease Air Force Base, NH, U.S. Air Force, Project Safety Manager. Provided safety oversight and inspection during remediation of solvent- and petroleum-contaminated site. Project involved excavation, drilling, confined space entry, demolition and construction/operation of a groundwater treatment plant.

Safety Inspection, Mound, OH, U.S. Department of Energy, Corporate Safety Officer. Provided inspection of operations involving remediation of site with potential mixed wastes. Operations included excavation and drilling.

Safety Inspection, Umatilla, OR, and Toole, UT, U.S. Department of Defense, Corporate Safety Officer. Provided inspection of operations involving remediation of military sites with contamination from solvents, petroleum and explosives.

Inspection and Safety Oversight, Illinois, Argonne Laboratory, Corporate Safety Officer. Provided inspection and safety oversight of confined space entry operations at radiation-contaminated site.

Inspection and Safety Oversight of Remediation Operations, NH, Sandia National Laboratory, Corporate and Site Safety Officer. Provided inspection and safety oversight of Level A remediation operations at site contaminated by explosive and reactive materials.

Safety Oversight of Construction Operations, Hartford, CT, State of Connecticut/G. Tomasso, Project Safety Manager. Provided safety oversight for highway construction operations. Activities involved safety oversight and inspections for remediation and excavation in areas known to meet requirements of 29 CFR 1910.120.

Audit/Inspection, Various Locations, Multiple Clients, Inspector. Provided audit/inspection including, but not limited to, the following projects:

- Remediation/incineration operations at a PCB-contaminated site in Illinois
- Remediation/incineration operations at a solvent/metals-contaminated site in Michigan
- Decontamination/demolition of abandoned piping structures with solvent and corrosives contamination at an electronics manufacturer in New York

Key Projects (Continued)

- Decontamination/demolition/remediation operations involving solvent contamination at a major supplier of photographic materials in New York

Publications and Presentations

Blackburn, T.L. 1997. "Integrated Contingency Planning: The Focus on Emergency Response." Proceedings of the EnviroExpo New England, Boston, MA.

GEORGE M. CRAWFORD, JR., CIH

Qualifications Summary

- More than 32 years of experience in environmental and industrial health, safety, hygiene, hazardous materials response, and occupational health management.
- Technical manager for construction, remediation, and renovation practice, high-hazard projects involving UXO, CWM, reactives/explosives, and thermal treatment technologies. Direct oversight of projects with unique hazards, e.g., military chemical agents; UXO; explosives residues in soil; dioxin, asbestos, lead, arsenic, PCBs, MOCA, and mercury; and ionizing radiation. Industrial hygiene projects involving incineration, construction, and reconstruction and demobilization.
- WESTON's Corporate Health and Safety Director for 8 years, responsible for developing/managing/updating the corporate health and safety program. Instructor in HTRW safety and health and emergency response. Presented more than 80 40-hour hazardous waste site training courses and 200 refresher and site supervisor courses.
- Certified CIH of Record on more than 40 USACE projects involving HTRW investigation, study, design, and remedial action activities. Responsible for WESTON's receipt of 8 USACE safety awards and Army safety award. Directly responsible for more than 1,300,000 hours for USACE with no lost time. Prepared SHERPs and PPE plans ranging from routine to innovative.

Registration

Certified in the Comprehensive Practice of Industrial Hygiene, American Board of Industrial Hygiene (1989); Recertified (1996)

Fields of Competence

Environmental health and safety management; industrial hygiene; occupational disease assessment; hazardous material site and emergency response training; hazardous materials site emergency response and remediation management; spill prevention and emergency response; and environmental risk assessment. Health and safety, emergency response plans review, development, and implementation. Management of high hazard projects involving hazardous, toxic, and radioactive wastes (HTRW); unexploded ordnance (UXO); and chemical warfare materials (CWM).

Credentials

B.S., Biology—Juniata College (1967)
40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3), WESTON
8-Hour Hazardous Waste Refresher Course, OSHA 29 CFR 1910.120(e)(8), WESTON (1999)
Site Health and Safety Coordinator Course, OSHA 29 CFR 1910.120(e)(4), WESTON (1999)
10-Hour Construction Safety Training, OSHA 29 CFR 1926, WESTON (1997)
Bloodborne Pathogens Training
Confined Space Entry Rescue Training, OSHA 29 CFR 1910.146, WESTON (1995)
Lead Asbestos Training, WESTON (1994)
First Aid/CPR Certification, American Red Cross, WESTON (1997)
(Instructed more than 50 40-hour and 50 8-hour refresher and site manager courses on hazardous materials, site activity, and emergency response)

Employment History

1983-Present WESTON
1980-1983 Rollins Environmental Services

Employment History (Continued)

1969-1980 Pennsylvania Department of Environmental Resources
1967-1969 Columbia University Medical Center

Key Projects

U.S. Air Force Programs, Various Locations, Health and Safety Manager. Reviewed and approved health and safety plans (HASPs) for 20+ U.S. Air Force multimillion dollar programs. Locations included Pease, Kelly, Barksdale, and McConnell Air Force Bases (AFBs). Work involved asbestos, pesticides, heavy metals, polychlorinated biphenyls (PCBs), solvents, and petroleum, oil, lubricants (POL). Ensured compliance with Occupational Safety and Health Administration (OSHA) and other regulations; conducted incident investigations and field site inspections, managed Material Safety Data Sheet (MSDS) programs, and developed and monitored routine medical examination and emergency medical care.

HTRW Contract, U.S. Army Corps of Engineers (USACE), Baltimore District, Health and Safety Manager. Directed and approved the implementation of field activities for adherence to safety, health, and emergency response plans (SHERPs); compliance with USACE safety requirements; OSHA; and other requirements. Responsible for medical monitoring, respirator fit testing, and training required by 29 CFR 1910.120. Ensured appropriate health and safety measures were followed by subcontractors on this \$15 million, 3-year contract.

Base Environmental Support Services, Aberdeen Proving Ground (APG), Health and Safety Manager. For this \$100 million restoration, compliance, conservation, and pollution prevention (P2) task order contract, has overall responsibility for health and safety, and develops and implements the programmatic HASP. Ensures all operations are in compliance with plan. Reviews all task order (TO) HASPs to ensure compliance with program plan, and performs health and safety performance audits on individual TOs. To date, the contract has achieved 40,000 hours of work with zero incidents, including Levels A and B personal protective equipment (PPE) and UXO.

USACE New England District (CENAE), Remedial Action Contract (RAC) Multiple Delivery Orders, USACE, Certified Industrial Hygienist (CIH). Reviewed safety plans, provided training and auditing of projects ranging from demolition to asbestos, to facility decontamination to UXO. Recognized for Safety Achievement by CENAE in 1997.

Facility Decommissioning, Babcock and Wilcox, U.S. Department of Energy (DOE), Mond, OH, CIH. Part of transition team for government-owned, contractor-operated DOE facility. Mission of the current contract is to decontaminate the facility and turn structures over to commercial development.

Housatonic River Project, Pittsfield, MA, U.S. Environmental Protection Agency (EPA) and USACE, CIH. As the CIH for the Housatonic River project, developed and implemented the health and safety program; performed initial site-specific training; directed air monitoring program; assists project superintendents in implementing the health and safety program. As CIH, visits the site monthly during sampling and construction activities, and is available for

Key Projects (Continued)

emergencies as needed. Oversees the activities of the SSHO, who reports directly to him. Reviewed and approved all safety and health plans and amendments. Performed reviews of safety program with Program Manager. Instituted self-safety audits with no safety incidents recorded. Under his direction, WESTON received the USACE's Safety Contractor of the Year Award.

Alabama Army Ammunition Plant (AAAP) Incineration Project, Alabama, USACE, CIH. Project involved assembly and operation of high-temperature incinerator at AAAP and feedstock excavation and preparation. Reviewed and approved the SHERP and amendments. Visited the site monthly for training and inspection. Project recognized by USACE for Safety Achievement as Large Contractor of 1994 and 1995 in the Mobile District USACE.

Incinerator Design and Construction, Colorado, Rocky Mountain Arsenal (RMA), USACE, Program Safety Officer/CIH. CIH of record during construction of a submerged quench incinerator (SQI) at RMA. The project was completed on time with no OSHA-recordable accidents in more than 200,000 labor-hours of work. Reviewed and approved the SHERP, provided startup training, and audited safety program implementation. The SQI was housed in a five-story building. All construction was managed by WESTON. The construction phase involved contracting with numerous tradespersons such as sheet metal and concrete workers, electricians, pipefitters, and heavy equipment operators. This phase of the project was completed without a lost time injury.

SQI Operation, RMA, Shell Oil/Morrison-Knudson, Program Safety Officer/CIH. Reviewed and approved the SHERP; provided technical guidance to the Site Safety Officer; and audited the project three times annually during the 3 years of operation. WESTON provided the maintenance and health and safety management during the management phase of the SQI. The SQI treated liquid with very high salt content in a high-temperature process. Operations hazards included hot surfaces and liquids, corrosives, 50% and 35% caustic solutions, acid treatment systems, and operation and maintenance (O&M) of the five-story complex. This phase of work also was completed without a lost time accident.

Old O-Field Permeable Infiltration Unit (PIU), APG, Aberdeen, MD, USACE, CIH and Health and Safety Manager. Responsibilities include overall management of the Health and Safety Program for this extremely sensitive and high-hazard project including safety plan development, air monitoring strategy development, risk assessment, Levels A and B PPE and emergency response training, and supervision of five Site Safety and Health Officers and technicians. This project involves preparation for and construction of a PIU or cap over a 5-acre site contaminated with CWM, UXO, industrial chemicals, explosives, and reactive chemicals. Site preparation included UXO surveys and clearance, construction of roadways, and erosion control measures. PIU placement involves use of remotely operated, low-ground-pressure construction equipment; operation of equipment in Level B protection; EPA Level A entries for UXO and container evaluations and response; fire contingency planning; and fire suppression system installation and management. The project proceeded with no lost time accidents in over 200,000 labor-hours of work. This achievement was recognized through a commendation from USACE.

Key Projects (Continued)

Interim Remedial Measures (IRMs), APG, Aberdeen, MD, USACE, CIH. Reviewed all SHERPs, site safety and health plans (SSHPs), and plan amendments, and addenda for 15 cradle-to-grave delivery orders (DOs). Served as consultant to the Project Safety Officer and audited project for health and safety concerns. Reviewed and determined levels of protection, risk analysis process and CWM monitoring procedures, and quality assurance (QA) programs. Worked with military agencies and chemical protective clothing manufacturers to review PPE requirements and determine an effective approach. Approved final level of protection selection for sites involving potential military chemical agent contact.

All DOs had high-hazard aspects, including potential encounter with UXO hazards and CWM, requiring UXO surveys and clearance for all DOs.

Unique hazards required development of additional special health and safety protocols such as:

- The first DO involving field work included decontaminating an underground tank containing a tearing agent. Level B protection was used, and a negative pressure containment cell was constructed around the work area.
- At Graces Quarters, disposal pits were excavated, which included potential UXO and CWM encounters that required close coordination with equipment operators, UXO contractors, and base Technical Escort Units (TEUs). Work also involved CWM monitoring, Level B PPE, operation of boats, and implementation of heat stress prevention protocols.
- At the Adamsite area, developed confined-space entry procedures for conducting sampling and instituted arsenic monitoring. A demolition plan was developed but not implemented.
- At the Nike Missile site, confined-space entry protocols were implemented to enter and survey six underground missile vaults, remove lead paint and asbestos-containing materials (ACMs), and sample for PCBs prior to filling the vaults with a flowable fill. This task required rigid traffic control of 50 to 60 cement mixers traveling from Aberdeen to Edgewood.
- At the 26th Street site, where the excavation was similar to that at Graces Quarters, radiation contamination was encountered. Health physics resources were mobilized, and work continued safely. The health physics support was instrumental in assisting the base in dealing with regulatory issues and agencies.
- At Old O-Field, a groundwater assessment and containment well system was installed. Work was conducted in Level B, and CWM monitoring was conducted. Following completion of this phase, a groundwater treatment facility (GWTF) was constructed.

The achievement of more than 200,000 labor-hours without a lost time accident was formally recognized by USACE. Achieved significant cost savings by demonstrating that the Old O-Field GWTF did not have to meet "maximum credible event" criteria; and was commended by USACE for completing 4 years on the project without a lost-time incident.

The Old O-Field GWTF was designed by WESTON and built under the direction of WESTON. The GWTF is designed to treat the contaminated groundwater from Old O-Field. Contaminants

Key Projects (Continued)

included volatile hydrocarbons, metals, acids, and CWM breakdown products. The construction phase lasted almost 9 months and involved contracting with numerous tradespersons such as masons, concrete workers, pipefitters, electricians, and heavy equipment operators. This phase of the project was completed without a lost time injury.

Once construction was completed, WESTON assumed responsibility for operating the GWTF. The GWTF has treatment processes for acids, volatile organics, and CWM breakdown products. Treatment chemicals include sulfuric acid, caustics, hydrogen peroxide, sodium hypochlorite, lime, and polymer. Treatment technologies included filtration, neutralization, and ultraviolet light (UV) oxidation. This phase of work was completed without a lost time accident.

Multiple Projects, Picatinny Arsenal, NJ, USACE, CIH. Responsible for the review of all SHERPs, amendments, and addenda under this multiple, concurrent DO. Served as consultant to the Project Safety Officer and audited the project for health and safety concerns. A key project included assessment of an explosives production process contaminated with explosive and reactive chemical residues. This involved use of remotely operated cameras to enter piping and assess crystalline deposits. Once contamination had been mapped, the piping was neutralized, decontaminated, and opened. The building housing the process was decontaminated, and asbestos and lead paint were removed following OSHA and EPA requirements. The building was successfully flashed to remove any traces of reactive contaminants.

Preplaced Remedial Action Contract (PRAC), Colorado, RMA, USACE, Program Safety Director, CIH. Responsible for surveying drums with the potential for chemical surety material (CSM) contamination, managing drums after characterization, maintaining a hazardous waste containment facility, and decontamination and surveying a building on the facility for ACM. Many buildings surveyed had been used in CSM production. Instrumental in review and determination of levels of protection (LOPs) and the risk analysis process.

Milan Army Ammunition Plant, Milan, TN, USACE, CIH. Provided CIH oversight, safety plan review, support of Site Safety Officer, and monthly auditing. Project involved extension of a landfill cap at Milan AAP. Project was principally a construction project and involved concrete work, excavation, and application of a clay and synthetic cap tied into the existing cap. Project was completed without a lost time accident.

HASPs and Field Operations Monitoring for Investigations and Remediation of U.S. Army Installations, Nationwide, USACE (Various Divisions), CIH. Provided oversight of preparation of HASPs and field work involving drilling and sampling at Volunteer AAP, Louisiana AAP, Umatilla AD, and Tooele AD (ordnance and explosive waste [OEI] and CWM were present). Worked with military agencies and chemical protective clothing manufacturers to review PPE requirements and to determine an effective approach acceptable to all parties. Approved final level of protection selected for sites involving potential military chemical agent contact. Performed similar work on remediation activities involving UXO and CSM at APG and Picatinny Arsenal.

Key Projects (Continued)

Development of Health and Safety Program, Rocky Flats, CO, Rockwell International, Health and Safety Manager. Provided oversight of initial development of the health and safety program for the work performed by WESTON beginning in 1984. Reviewed and recommended training materials and programs for Rockwell and provided training to WESTON personnel. Made regular visits to site to review conformance with the health and safety program and reviewed and approved site-specific HASPs throughout the duration of the project.

Health and Safety Management, Pennsylvania, WESTON, Corporate Health and Safety Director. Developed, managed, and updated the health and safety program, as well as conducted training in and monitoring of conformance with the provisions of the health and safety program. Managed a staff of up to 15 persons and maintained an indirect management role with 50 Safety Officers. Instituted a practice of annual Safety Officer meetings, providing technical skill development.

Health and Safety Management, Spill Prevention and Emergency Response Technical Assistance Team (TAT) Multimillion Dollar Contract, New Jersey, EPA, Division Safety Officer. As the CIH for the cost-reimbursable, cradle-to-grave TAT contract, implemented the health and safety program, trained personnel for emergency response and hazardous materials site safety, auditing conformance with the program, and assisting with management of the Corporate Health and Safety Program. Supervised 17 Safety Officers at various offices nationwide for 3 years (Safety Levels A, B, C, D).

Emergency Response Training, Various Locations, U.S. Navy, Naval Energy and Environmental Support Activity (NEESA), Training Manager. Developed, managed, and presented 11 emergency response training sessions at U.S. Navy and Marine facilities throughout the United States. In this same period, provided similar courses at U.S. Department of Energy (DOE) facilities at Rocky Flats, Fernald, and Los Alamos National Laboratory.

Hazardous Waste Site Training, Various Locations, Multiple Clients, Project Manager. Developed, managed, and provided training in more than 100 internal and external 40-hour training courses.

PCB Site Assessment and Emergency Action, Various Locations, EPA, TAT Contract, Industrial Hygienist/Toxicologist. Provided management and safety monitoring of assessments, sampling programs, and removal actions at PCB sites. Activities included safety protocol development, environmental assessment, and supervision of safety activities at PCB disposal and incineration sites.

Dioxin Site Assessments and Emergency Response Actions, New Jersey and Virginia, EPA, TAT Contract, Industrial Hygienist/Toxicologist. Managed the assessment and cleanup of dioxin-contaminated sites. Activities included sampling; developing cleanup, stabilization, and treatment processes; and safety management of cleanup contractors.

General Hazardous Waste Site Assessments and Emergency Response Actions, Various Locations, EPA, TAT Contract, Industrial Hygienist/Toxicologist. Provided management and

Key Projects (Continued)

safety monitoring of assessments, sampling programs, and removal actions at asbestos, pesticide, and volatile organics hazardous waste sites.

Dioxin Disposal Technology Assessment, Times Beach, MO, Confidential Client, Project Safety Manager. Provided safety management of a high-temperature dioxin decontamination testing process. Project included developing air-sampling strategies, as well as worker protection procedures, providing site-specific training, and implementing the air monitoring and decontamination sampling schemes.

Hazardous Waste Incinerator, New Jersey, Rollins Environmental Services, Safety Supervisor. Designed, managed, and implemented a health, safety, and emergency response program at a hazardous waste incinerator. Duties included training, emergency response team development, wastestream safety plan development, air sampling protocol development and implementation, safety plan development and audits of field services unit, medical program development, and management of a \$1.2-million health and safety program and equipment budget. Reduced injury rate by 50% and lowered Workers' Compensation Experience Modification Rate to less than 1.0.

Industrial Hygiene, Pennsylvania, Pennsylvania Department of Environmental Resources (PADER), Industrial Hygiene Supervisor. Provided management and enforcement of industrial hygiene programs in two regional offices of PADER. Included conducting industrial hygiene surveys, authoring citations, and assisting with compliance plan preparation.

Occupational Health Assessment, Pennsylvania, Pennsylvania Department of Health, Technician. Managed occupational health mobile laboratory studies of coal miners and other occupations at risk from exposure to pneumoconiosis-producing dusts. Other projects included monitoring occupational health data from key Pennsylvania industries, reporting findings to occupational physician staff, and coordinating relevant industrial hygiene studies.

Publications and Presentations

Crawford, G.M., Jr. 1990. "Health and Safety at Hazardous Waste Sites." Presented at American Industrial Hygiene Association, Delaware Valley Section Meeting, Philadelphia, PA.

Crawford, G.M., Jr. 1990. "Hazardous and Radioactive Laboratory Materials Handling, Storage and Disposal." Presented at International Society of Pharmaceutical Engineers, North Carolina Seminars, Raleigh, NC.

Crawford, G.M., Jr. 1985. "Health and Safety Training at Hazardous Waste Sites." Presented at HazPro Workshop, Baltimore, MD.

Crawford, G.M., Jr. 1971. "Life Expectancy of Pennsylvania Coal Miners." *Archives of Environmental Health*.

Publications and Presentations (Continued)

Crawford, G.M., Jr. 1969. "Development of Patterns of Coal Workers' Pneumoconiosis."
Proceedings of the National Academy of Sciences Conference on Coal Workers'
Pneumoconiosis.

RICHARD A. DELANO, P.E.

Qualifications Summary

- Nine years of experience in pollution management ranging from remedial investigations to remedial construction.
- Clients have included both government and private industry.
- Experience as environmental data manager and technical lead for voluntary site investigation.
- Experience as Resident Engineer for a building decontamination and demolition project.
- Provided field engineering oversight and technical consultation for a low temperature thermal desorption soil remediation project.
- Implemented and supervised field implementation of bench- and pilot-scale treatability studies for an oily sludge waste.
- Wrote several FSs addressing both source control and management-of-migration operable units.
- Provided recommendations for outdoor and indoor remedial design for an RI/FS project.
- Environmental sampling experience.
- Land surveying field work experience.
- Experience with conducting FSs and EE/CAs under EPA requirements, remedial actions under CERCLA, projects under MADEP.

Registration

Registered Professional Engineer in the State of Maine (1993)

Fields of Competence

All phases of environmental projects including: site investigations (SIs); feasibility studies (FSs); treatability studies; remedial design; remedial construction oversight and building demolition; geographic information system (GIS)/Key environmental data management system; and low temperature thermal treatment systems.

Credentials

M.Eng., Environmental Engineering—Cornell University (1990)
B.S., Civil and Environmental Engineering—Cornell University (1989)

M.B.A. Course Work—Rochester Institute of Technology (1995-1996)

Construction Quality Management for Contractors, WESTON (1998)

Site Health and Safety Coordinator Course, OSHA 29 CFR 1910.120(e)(4), WESTON (1998)

8-Hour Hazardous Waste Refresher Course, OSHA 29 CFR 1910.120(e)(8), URS (1997)

40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3), TAMS (1989)

Confined Space Training for Non-Entry Rescuers, OSHA 29 CFR 1910.146, WESTON (1998)

IATA/DOT Hazardous Shipping Training, WESTON (1998)

First Aid/CPR, American Red Cross (1999)

X-ray Fluorescence Field Screening Technology (1998)

Environmental Compliance Management and Understanding the MCP, Northeastern University (1996-1997)

Fate and Transport Seminar, University of Southern Maine (1992)

American Society of Civil Engineers

GIS/Key Environmental Database

Suretrak by Primavera, Scheduling Software

Employment History

1998-Present WESTON
1996-1998 URS Greiner, Inc.
1990-1996 ABB Environmental Services, Inc.
1987-1989 TAMS Consultants, Inc.
1983-1987 Lyon Engineering

Key Projects

GE/Housatonic River Project, U.S. Army Corps of Engineers, New England District (CENAE)/U.S. Environmental Protection Agency (EPA) Region I, Pittsfield, MA, Site Manager. Site management and subcontractor management responsibilities. Communication with client and EPA. Responsible for sampling of surface water, deep and shallow water sediment, flood plains, vernal pools, and riverbanks on a large-scale polychlorinated biphenyl (PCB) investigation and remediation project, along with quality control (QC) of data forms.

Soil and Sediment Remediation, Seneca Army Depot Activity, Romulus, NY, U.S. Army Corps of Engineers (USACE), Construction Engineer. Remediation of a 30-acre former open burning grounds and creek for metals contamination. Project requires significant logistics coordination due to base security and unexploded ordnance (UXO) clearance by others. Involves excavation, hauling, staging, sampling, and on-site stabilization of soils, dewatering of excavations and treatment of water, construction of a 30-acre soil cover, and remediation of creek bed. Prepared plans and proposals for site remediation activities.

Groundwater Pump-and-Treat, Kelly Air Force Base (AFB), San Antonio, TX, Air Force Center for Environmental Excellence (AFCEE), Construction Engineer. Project involved construction of wells and interceptor trenches and an ultraviolet (UV) oxidation (OX) treatment plant for contaminated groundwater. Prepared scopes of work for subcontractors and evaluated bids for proposal preparation.

Landfill Closure, Town of North East Landfill, NY, Town of North East, Resident Engineer. Resident Engineer on a 19-acre landfill closure and wetlands remediation project. Project included clearing, regrading site with alternate grading material (AGM), relocating wetlands sediments, installing a New York State Part 360 cap, and constructing access roads and drainage structures. Responsible for overseeing the work, resolving issues, verifying compliance with specifications, reviewing and approving payment applications, conducting biweekly progress meetings, and documenting the work through daily reports and meeting minutes.

Remedial Action, Salem Acres Superfund Site, Salem, MA, South Essex Sewerage District (SESD), Resident Engineer. Responsible for the oversight of the remedial action for this Superfund site. The remedy includes excavation of contaminated soils and sludges from sludge lagoons that received wastewater treatment plant (WWTP) and tannery waste sludge.

Key Projects (Continued)

Responsibilities included: daily communication with contractor, SESD, EPA, and USACE personnel; identifying and resolving deficiencies and enforcing contract requirements; documenting all work activities through daily reporting; reviewing and resolving payment requisitions with the contractor; and supervising field staff. Wrote and implemented specification for reconstruction of a small area of impacted wetlands.

Facility Demolition Oversight, Rochester, NY, Confidential Client, Resident Engineer.

Overview of and documented all aspects of the work performed by the subcontractor on the demolition of a former manufacturing facility. Responsible for overseeing manifesting and disposal of various hazardous wastes, including concrete, wood, drums, debris, and soil contaminated with mercury, volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and inorganic plating wastes. The project also included asbestos removal, underground storage tank (UST) removals, excavation and disposal of related contaminated soils, liquid mercury mapping and recovery, and site grading and paving. Enforced conformance with project specifications, and reviewed and negotiated contractor invoices and change orders. Documented work conducted using daily logbook entries, site sketches, daily e-mail reports to project reviewers, weekly construction progress reports, photographs, and videotape.

Manufacturing Facility Voluntary Site Investigation (SI), Building Decontamination and Demolition (D&D), Rochester, NY, ABB, Technical Lead and Environmental Data

Manager. Responsible for SI of a former scientific instrument manufacturing facility. Used GIS/Key environmental data management system as a tool for real-time site evaluation involving on-site chemical analyses for inorganics and VOCs. Created concentration isopleth maps and developed contaminated soil volume estimates for a voluntary cleanup feasibility study (FS).

NPL Site Remediation, Massachusetts Military Reservation (MMR), Cape Cod, MA, Hazardous Waste Remedial Action Program (HAZWRAP), National Guard, Field Engineer. Provided construction oversight services for a removal action at this facility. The project involved excavation and low-temperature thermal desorption treatment of soils containing solvent and fuel-related chemical contamination. Provided engineering consultation on technical issues including change orders, verification of compliance with contract documents, review of contractor invoices, and project documentation. Attended meetings with EPA, the Massachusetts Department of Environmental Protection (MADEP), National Guard Bureau (NGB), and contractor personnel.

RI/FS, North Lawrence Oil Dump Superfund Site, North Lawrence, NY, New York State Department of Environmental Conservation (NYSDEC), Engineer.

Implemented three bench-scale treatability studies to evaluate remedial options for an oily sludge containing PCBs, lead, and VOCs. Used these results in an FS to estimate cleanup costs and select a preferred remedy, which included excavation of contaminated sludges, soils, and wetlands sediments, on-site chemical/physical stabilization of waste materials, construction of an on-site disposal cell with a Part 360 cap, and wetlands restoration. Provided field engineering oversight during pilot-scale testing of the selected remedy to further evaluate design parameters.

Key Projects (Continued)

RI/FS, Kessman/Cross County Sanitation Landfill Superfund Site, Patterson, NY, NYSDEC, Engineer. Responsible for evaluating remedial options and a preferred remedy for a landfill closure and wetlands remediation/restoration project. Field activities included a seismic survey, piezometer and well installation, test pitting, and surface-water/sediment sampling. Preferred remedy included “hot spot” drum removal, installation of a Part 360 cap, wetlands sediments excavation and on-site disposal, and wetlands restoration. Presented results in a public meeting.

RI/FS Review, U.S. Army Materials Testing Laboratory (AMTL), Watertown, MA, USACE, Project Engineer. Reviewed a completed RI/FS and provided design recommendations to USACE for indoor and outdoor remediation. Tasks completed included a kick-off meeting and site visit with USACE, review of documents from the RI/FS consultant, oral presentation of findings to USACE, and production of a final report to identify sites at which USACE could expedite design and remediation. Coordinated the review from several disciplines, including geology, hydrogeology, risk assessment, state regulations, design engineering, and remedial construction. Combined the RI/FS review results, site visit, and presentation into a final recommendations report.

FS, ServAll Laundry Site, Bay Shore, NY, NYSDEC, Engineer. Evaluated source control and management-of-migration alternatives for a site contaminated with chlorinated solvents and associated degradation products. The FS evaluated several options for the source area and several pump-and-treat options for a very large plume of groundwater contamination. Contributed to the remedial design, which included a source area soil vapor extraction system and groundwater pump-and-treat system.

FS, Badger Army Ammunition Plant, Baraboo, WI, Army Environmental Center (AEC), Cost Estimator. Coordinated the cost estimating activities for sites containing explosive and propellant contamination. Costs were estimated for alternatives addressing soils, waste pits, surface-water, and groundwater contamination.

FS, Fort Benning Pesticide Site, Columbus, GA, U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), Project Engineer. Developed and analyzed remedial alternatives for a source control FS. Involved identifying, evaluating, and screening remedial technologies capable of treating soil contaminated with chlorinated pesticides. The alternatives were screened and analyzed based on EPA criteria to identify the most suitable option for the site.

Engineering Evaluation/Cost Analysis (EE/CA), Naval Air Station (NAS) Brunswick, Brunswick, ME, U.S. Navy, Engineer. Evaluated three alternatives to support a site remedy for a non-time-critical removal action at this pesticide-contaminated site. Worked on two FSs at NAS Brunswick: one FS evaluated six options for a municipal landfill site, ranging from no action to containment to pump-and-treat. The other FS evaluated source control and management-of-migration alternatives for a fire training area and a plume of groundwater contaminated with chlorinated VOCs.

Key Projects (Continued)

Removal Action, MMR, Cape Cod, MA, HAZWRAP, U.S. Air Force, Engineer. Worked on a responsiveness summary for a removal action. Addressed public comments concerning air emissions from a proposed low-temperature thermal desorption treatment unit and the possibility of formation of toxic by-products such as dioxins and furans. Questioned vendors of treatment units regarding issues raised by the public. Compiled the information in the responsiveness summary in a comment/response format.

FS, Cannon's Engineering Corporation Superfund Site, Bridgewater, MA, ABB-ES, Engineer. Wrote the FS, including sitewide cleanup alternatives addressing contaminated soils, groundwater, and structures. The alternatives were evaluated based on EPA criteria.

Remedial Construction, Love Canal Hazardous Waste Site, Niagara Falls, NY, NYSDEC, Remedial Construction Inspector. Supervised and inspected the construction of a dewatering and containment landfill for contaminated creek sediments and building debris. Inspected concrete pouring for the construction of a decontamination and drum storage facility, and the operation and monitoring instrumentation of creek bypass pumps. Verified that topographical field measurements met design specifications for landfill construction.

Various Projects, Bloomfield, NJ, Multiple Clients, Consulting Intern. Organized and supervised a traffic-counting program for a hydroelectric project in New Jersey. Analyzed traffic-count data. Performed engineer's estimates of earthwork quantities and materials for a hazardous landfill site cleanup. Designed an earth embankment as part of a wetlands reclamation project, and corrected and revised design plans for various projects.

Land Surveying, Various Locations, Multiple Clients, Engineering Assistant. Assisted with performing rod and transit property surveys, plotting, and drafting.

LEE R. DEPERSIA, P.E.

Qualifications Summary

- Nineteen years of environmental engineering experience in a variety of disciplines, including water supply protection, Safe Drinking Water Act (SDWA) compliance and drinking water system infrastructure assessment, Resource Conservation and Recovery Act (RCRA) hazardous waste compliance monitoring and corrective action, Toxic Substances Control Act (TSCA) investigations and requirements, air pollution inventories, industrial hygiene surveys, environmental assessments, hazardous material emergency response, and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous waste site investigations.
- Thirteen years of project management experience managing multitask, multidisciplinary, environmental projects, including investigations, remedial designs, and remedial actions.
- Nine years of experience as a U.S. Air Force Officer, including 4 years as an Air Force Project Manager for environmental restoration projects.

Registration

Registered Professional Engineer in the State of Texas (#68427; 1990)

Fields of Competence

Environmental assessments; hazardous waste site investigations; contaminant fate and transport; federal environmental program requirements; risk assessment procedures and protocols; managing comprehensive environmental projects; air pollution inventories; industrial hygiene; emergency response.

Credentials

M.S., Environmental Engineering—University of Florida (1986)
B.S., Environmental Engineering—University of Florida (1981)
40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3), WESTON (1992)
8-Hour Hazardous Waste Refresher Course, OSHA 29 CFR 1910.120(e)(8), WESTON (1996)

Employment History

1990-Present WESTON
1987-1990 Air Force Occupational and Environmental Health Laboratory
1981-1987 Air Force Bioenvironmental Engineer

Key Projects

Environmental Services, GE/Housatonic River Project, Pittsfield, U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE), MA, Project Manager. Project Manager for the HTRW, CPFF environmental services contract for CENAE and EPA Region I at the GE/Housatonic River Project at Pittsfield. Responsible for managing overall contract cost, schedule, and technical quality. Managed work at the site under 3 contracts from multiple funding sources, totaling 19 task orders valued at \$27 million and has handled 71 modifications. Single point of authority and responsibility for execution of all task orders in accordance with contract requirements. The scope of work includes investigation

Key Projects (Continued)

and characterization services for six operable units for PCB-contaminated soil, sediment, groundwater, and surface water. Directs groundwater, sediment, soil, biological, and storm sampling. Supervised the Allendale School FS, development of an EE/CA for removal activities on a 1½ mile reach of the river, and habitat and biological related studies.

Manages 35 subcontractors, many of whom provide specialty biological and ecological related services. Committed to meeting small business goals, as evidenced by WESTON's track record at Pittsfield: we have exceeded SB/SDB/WOSB goals by 37.2% on this contract. Mobilized within 1 month of notice to proceed (NTP). Over an 18-month period, collected more than 15,000 samples from a variety of media, including biological tissue samples. Used state-of-the-art field screening technologies at Pittsfield that reduced site characterization costs by 30%.

Environmental Services, Aberdeen Proving Ground (APG), MD, Deputy Program Manager. Responsible for all aspects of operations at APG under a \$100 million basic ordering agreement contract to provide compliance and remediation services. Contract management and execution is performed from a project office located in Edgewood, MD. Projects include high hazard remedial activities involving remediation of wastes contaminated with explosives and potential chemical warfare agents (CWA). Unexploded ordnance hazards and past use of many APG facilities for research and development with CWA present challenges for investigation and remediation activities. Projects performed under this program included preparation of CERCLA decision documents (Proposed Plans and RODs), groundwater extraction system design incorporating natural attenuation for portions of the plume, landfill capping, excavation and disposal of contaminated soil, use of recirculating well technology to treat contaminated groundwater, and various assignments involving compliance with environmental regulations. Supervised several project managers and provided overall technical and financial support and direction. As a result of his management, WESTON delivered 100% of our task orders on time and within schedule. Also, managed 10 subcontractors and met all SB/SDB/WOSB goals.

Environmental Services, New Hampshire, Pease Air Force Base (AFB), Task Manager. Overall Project Manager for all Pease AFB task orders (total value of all projects exceeds \$40 million). Responsible for all aspects of the projects, including scheduling, budgets, execution, and reporting. Pease AFB is listed on the NPL and was the first AF base to close as part of the Base Closure and Realignment Act of 1988. Because Pease AFB was the first AF base to close, many issues related to closure and CERCLA procedures were resolved for the first time at Pease. Played an integral role in developing creative solutions to these unique problems. Through a Federal Facilities Agreement (FFA), RI/FS activities at Pease AFB were accelerated to provide for early transfer and redevelopment of base property. The RI/FS field effort at Pease included +500 monitor wells and 2,000 soil borings and consisted of as many as 10 drill rigs operating at one time and field teams of as many as 60 people. Scheduling and logistical controls established for the projects resulted in meeting or beating all required FFA document due dates. Ten major RI/FS reports as well as Work Plans, SAPs, Community Relations Plans, PA/SI Reports, Treatability Study Work Plans, Proposed Plans, and RODs were provided. All RI reports and FS reports were approved and accepted by EPA and the State of New Hampshire. In addition to RI/FS activities, projects have included design, installation, operation, and maintenance of three

Key Projects (Continued)

interim groundwater recovery and treatment systems; three drum removal interim actions; and five contaminated soil removal interim activities.

Environmental Services, New Hampshire, Pease AFB, Deputy Task Manager. Responsible for all field activities and document preparations on all Pease AFB task orders. Assisted the Pease Project Manager with scheduling and resource tracking. Negotiated scope of work with regulatory agencies. Worked with the Air Force and regulatory agencies to develop a strategy for implementing environmental restoration activities at Pease while minimizing impacts to the base closure process and property transfer. Managed the production and submittal for four major RI and FS reports to meet FFA due dates. Developed a comprehensive basewide approach to establishing background concentrations for environmental media to be used in assessing detected contamination. Directed production of a risk assessment protocols document that was used to obtain concurrence with regulatory agencies on procedures for the human health and ecological risk assessment.

Baseline Investigation of Soil and Water, Clark Field, Republic of the Philippines, Project Manager. Managed sampling and analysis of 30 water supply wells and correlation of water quality with potential sources of groundwater contamination, which were identified through a comprehensive literature review and site visits. The soil baseline investigation involved intensive activities to collect and analyze surface and subsurface soil samples for suspected contaminants at 14 priority sites based on previous activities at the sites such as PCB spills, fire training areas, landfills, etc.

Hazardous Waste Analysis Plans (HWAPs), Various Locations, Air Combat Command (ACC), Project Manager. Project manager for developing RCRA HWAPs for four ACC bases. Project included site visits to inventory and inspect hazardous waste streams, characterization of monitoring requirements, and developing protocols for sampling and analysis. Separate plans were prepared for each installation.

Water Systems Evaluation, Various Locations, Air Combat Command, Technical Lead. Performed an evaluation of the water quality and infrastructure for the drinking water systems at three Air Force Bases. Each base's water system served a population of more than 3,000 people. The evaluation included an assessment of compliance with the Safe Drinking Water Act (SDWA), examination of current water system operating and maintenance practices, and developing recommendations to improve water quality and system operability.

Numerous Environmental Projects, Brooks AFB, Texas, Various Locations, Major Command Project Manager. Provided Air Force technical and contractual oversight of environmental projects totaling more than \$32 million for five Air Force Major Commands involving more than 25 cost reimbursable projects to meet CERCLA/RCRA compliance at 17 different Air Force installations. Senior advisor to 11 Technical Program Managers for project strategy, execution, and regulatory requirements. Resolved difficult technical, contractual, and political issues and negotiated project requirements with regulatory agencies. Project Manager for an innovative in situ soil remediation project involving radio frequency radiation used to strip contaminants from soil.

Key Projects (Continued)

Multiple Environmental Projects, Various Locations, U.S. Air Force Occupational and Environmental Health Laboratory, Chief, Technical Management Function. Supervised four Air Force engineers managing environmental projects. Provided oversight and guidance on technical and procedural aspects of the projects. Developed a standardized technical statement of work used for all division projects that integrated the RI/FS process into the Air Force IRP. Project Manager for developing a technical specifications handbook of detailed field procedures and reporting formats used for all division projects.

Multiple Environmental Projects, Various Locations, U.S. Air Force Occupational and Environmental Health Laboratory, Technical Program Manager. Air Force Project Manager for environmental projects at Charleston AFB, South Carolina; Eglin AFB, Florida; Patrick AFB, Florida; Cape Canaveral AFS, Florida; and Brooks AFB, Texas. Projects included CERCLA, RCRA, and underground storage tank (UST) investigations. Identified project objectives and developed scopes of work to meet objectives. Managed a PCB soil contamination removal project that included soil excavation and disposal and free product recovery. Managed a comprehensive UST removal program for Eglin AFB to remove more than 20 former USTs throughout the installation.

Multiple Environmental Projects, South Carolina, Myrtle Beach AFB, Chief, Bioenvironmental Engineering Services. Responsible for environmental protection, water and air quality monitoring, pollution prevention (P2), hazardous material and hazardous waste management, and industrial hygiene for a work force of 3,000 military and civilian personnel. Advised unit and installation commanders on matters relating to environmental protection, disaster response, water quality, hazardous materials and industrial hygiene. Managed basewide ionizing/non-ionizing radiation sources and lasers on base. Maintained a Nuclear Regulatory Commission radioactive material permit. Supervised and trained a staff of four engineering technicians.

Publications and Presentations

Bruckner, A., L. dePersia, and A. Ditto. 1997. "Technical Impracticability." *The Military Engineer*, Volume 89, Number 587.

de Persia, L., E. Barnes, and A. Ditto. 1994. "Initiatives for Acceleration of Environmental Restoration at Pease AFB, NH." American Defense Preparedness Association 20th Environmental Symposium.

Barnes, E., L. dePersia, and A. Ditto. 1992. "Pease AFB - Managing an Accelerated Remedial Investigation at an Installation Under the Base Closure Process." American Defense Preparedness Association 18th Environmental Symposium.

Qualifications Summary

- More than 15 years of program management experience working on U.S. Army Corps of Engineers (USACE), Air Force Centers for Environmental Excellence (AFCEE), and EPA cost-reimbursable and fixed-price delivery order (DO) contracts ranging in value up to \$50 million and involving the management of more than 50 personnel.
- Twenty-seven years of diversified experience in all aspects of hazardous, toxic, and radiological waste (HTRW) remediation, including managing cleanup at underground storage tank (UST) and oil/fuel storage sites, directing unexploded ordnance (UXO) clearance activities, building and operating groundwater treatment systems, overseeing dredging operations, and developing alternative/innovative cleanup strategies.
- As Vice President and Operations Manager of WESTON's Eastern Division, has a complete understanding of WESTON's management systems, as well as technical, contractual, health and safety, and QA procedures.
- Extensive experience with RCRA, CERCLA, NPDES, TSCA, CWA, Clean Air Act (CAA), and National Environmental Policy Act of 1969 (NEPA), OSHA and hazardous waste transportation and disposal requirements. Also familiar with state and local requirements including the MCP.

JOHN W. HAMMOND, P.E., DEE

Registration

Diplomate, American Academy of Environmental Engineers
Registered Professional Engineer in the Commonwealths of Pennsylvania (023998-E) and Massachusetts (39193) and in the States of Delaware, New Jersey (GE 31326), and New Hampshire (9261)

Fields of Competence

Technical and managerial assignments related to all types of environmental engineering and science projects; site characterization studies; emergency response to oil spills and to releases of hazardous and toxic materials; design and evaluation of treatment and disposal methods; implementation of remedial actions and construction and O&M of environmental treatment facilities; development of emergency response and hazardous waste site safety plans; preparation of sampling plans and overall quality assurance (QA) plans consistent with U.S. Environmental Protection Agency (EPA) QAMS-005/80; and regulatory compliance and general liaison work between industries/responsible parties and government agencies related to major federal environmental statutes, especially the Clean Water Act (CWA) (Effluent Guidelines/National Pollutant Discharge Elimination System (NPDES) programs); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund) (CERCLA) (National Contingency Plan (NCP) activities); Safe Drinking Water Act (SDWA); Toxic Substances Control Act (TSCA); and Resource Conservation and Recovery Act (RCRA).

Credentials

M.S., Chemical Engineering—Drexel University (1977)
M.S., Environmental Engineering—Drexel University (1976)
B.S., Chemical Engineering—University of Delaware (1971)
40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120 (e)(3), WESTON (1982)
American Institute of Chemical Engineers (AIChE)
Water Pollution Control Federation
Society of American Military Engineers (SAME)

Employment History

1977-Present WESTON

1972-1977 City of Philadelphia Environmental Engineer

Key Projects

Environmental Services Projects, Various Locations, WESTON, Senior Vice President/Eastern Region. Currently manages more than 500 personnel, 250 subcontractor personnel, and \$200M in environmental services projects. Corporate Sponsor for the 5 A/E and RAC contracts for EPA Region I and CENAE, ensuring adequate resources are allocated; resolving issues or conflicts among WESTON, CENAE, and its customer; continually seeking cost and schedule savings; developing and implementing innovations; and partners with team subcontractors' executives.

Remedial Action and Investigation/Design Contracts, Various Locations, USACE, New England Division, Corporate Sponsor and Project Manager. Corporate Sponsor and Program Manager for the simultaneous execution of the following 3 cost reimbursable contracts, valued at \$70 million, for the Corps of Engineers, New England Division:

- Remedial Action Contract (DACW 33-95-D-0002) in Support of Hazardous, Toxic, Radioactive Waste (HTRW) Program of the Corps of Engineers, New England Division, 5-year, \$10 million, IDIQ.
- Remedial Action Contract (DACW-33-95-D-0004) in Support of Hazardous, Toxic, Radioactive Waste (HTRW) Program of the Corps of Engineers, New England Division, 5-year, \$50 million, IDIQ.
- Investigation and Design Contract (DACW 33-94-D-0009) of Miscellaneous Civil Works and Military HTRW Contracts for the Corps of Engineers, New England Division, 5-year \$10 million IDIQ.
- GE/Housatonic River Project, Pittsfield, MA, U.S. EPA and USACE. Successfully integrated current Pittsfield assignments into WESTON's overall HTRW program supporting CENAE, and developed concept of nationally recognized technical experts to provide best available direction and guidance necessary to fulfill project requirements. Personally selected Lee dePersia as Project Manager for current Pittsfield contracts based on Lee's breadth of experience and demonstrated ability to successfully lead and manage complex, multidisciplinary cradle-to-grave assignments. Provided guidance and direction to enable Lee and the project team to successfully respond to the rapid and dynamic needs at Pittsfield.

Established and directed common program management office for the implementation of all three contracts, resulting in:

- Standardization of procedures and improved performance efficiencies.
- Maximum, appropriate and cost-effective utilization of technical resources.

Key Projects (Continued)

- Maximum utilization of the RAC and AE IDT contracts to provide flexibility and timely execution of assignments for CENED.
- Maximized customer (CENED) satisfaction by providing quality services throughout the administrative, engineering, construction, and operations functions of the contracts.
- WESTON, CENAE, and EPA receiving Vice President Gore's Hammer Award for identifying a \$6M cost savings at the Charles George Superfund site.

Groundwater Remedial Action Contract (F4162-92-D-8009), Various Locations, U.S. Air Force Center for Environmental Excellence (AFCEE) Program, Program Manager.

Directed the design, construction, startup, and operation of groundwater treatment systems at various Air Force Bases (AFBs) nationwide under this 3-year, \$25-million, cost-reimbursable contract. Managed seven DOs at six different AFBs, ranging in value from \$400,000 to \$10 million, in accordance with CERCLA cleanup plans.

- Saved the Government approximately \$2 million at Beale AFB by determining that it was unnecessary and inappropriate to construct a groundwater treatment plant, even though WESTON was selected to construct and operate the plant.
- Maintained continuity and demonstrated flexibility at Pease AFB by scheduling and coordinating the work assignments to keep key staff on the project, resulting in a seamless transition between contracts.
- Enhanced responsiveness by negotiating DOs in 10 days or less, many within 48 hours.

National Quality Assurance Officer, EPA Technical Assistance Team (TAT) Program, USEPA, Nationwide. Prepared overdue Quality Assurance Program Plan (QAPP), which was approved by USEPA, for this contract. Subsequently, administrated and implemented this program through the presentation of training courses, completion of inspections, performance of audits, and resolution of variances. This contract involved a full spectrum of services to EPA related to the characterization of oil and hazardous material releases and the impacts of these releases, the evaluation and development of remedial strategies for clean-up of more than 200 contract personnel, over a period of three years.

Remedial Design/Remedial Action (RD/RA), Delaware, Tybouts Corner Landfill, Program Manager. Directed engineering and HTRW construction contractors in managing this 5-year, Potentially Responsible Party (PRP)-led, \$30 million remediation project at a hazardous waste site listed No. 2 on EPA's National Priorities List (NPL).

- Identified and negotiated changes with EPA, which resulted in savings of at least \$3 million in construction costs by substituting the use of slurry walls for groundwater interceptor drains and simplifications to the proposed groundwater treatment plant. Negotiated an Explanation of Significant Differences (ESD) document with EPA to amend the work plan to the consent decree.
- Ensured compliance of PRP activities with the consent decree and with the EPA-approved work plan for RD/RA implementation.

Key Projects (Continued)

- Negotiated changes in RD/RA schedule to allow for completion of RD/RA modifications. (Project is currently 9 months ahead of schedule.)
- Prepared community relations Fact Sheets and participated in meetings.

RD/RA, Sayreville Asbestos Site, New Jersey, Confidential Client, Project Director.

Supervised the design, the preparation of the closure plan and construction specifications, and the construction management of the on-site closure of a 50-acre hazardous waste site in New Jersey.

- Successfully negotiated approved closure plans with the New Jersey Department of Environmental Protection and Energy (NJDEPE).
- Negotiated changes to approved closure plan to allow for improved construction productivities and reduced construction costs.
- Successfully negotiated with other state and local agencies to obtain approved construction permits and soil erosion and sediment (E&S) control plans.
- Conducted public meetings.

Facility Design Construction and Startup, Toshiba Display Devices, Inc., New York, Project Manager. Managed the design, construction, and startup of a grassroots 600,000-gallon-per-day (gpd) industrial wastewater treatment plant (IWTP) designed to meet EPA New Source Performance Standards (NSPSs) under this 1.5-year, \$2.25 million contract. Subsequently managed the design, construction, and startup of a \$2 million (400,000-gpd) expansion of initial facilities.

- Completed the project on time and within budget by managing the preparation of detailed critical path schedules and detailed work plans.
- Prepared and negotiated NPDES discharge permits for the facility.

Emergency Response and RA, Delaware City, DE, Confidential Client, Project Manager.

Supervised the emergency response and cleanup of a 500,000-gallon spill of chlorobenzenes in a wetlands/estuary environment under this 4-month, \$990,000 contract.

- Response included dredging contaminated sediments using a 2,000-gallon-per-minute (gpm) dredge whose discharge was treated in a 4,000,000-gallon high-density polyethylene (HDPE)-lined sedimentation basin constructed during the response. Subsequent treatment used an air stripper and an activated carbon system.
- Dredged approximately 5,000 yd³ of sediments contaminated with dichloroethylene/trichloroethylene (DCE/TCE) (up to 50%) to a 3,500,000-gallon HDPE-lined sedimentation basin that was designed and constructed during the response. Discharged liquids from the basin through temporary air strippers, carbon adsorption, and pH adjustment facilities that were mobilized for the response. Discharge met NPDES permit limits of less than 1.5 parts per million (ppm) total chlorobenzenes.

Key Projects (Continued)

Environmental Cleanup Responsibility Act (ECRA) Closure/RA, New Jersey, U.S. Steel, Inc., Project Manager. Managed the cleanup and closure of areas at an abandoned steel mill with soil contaminated with lead in concentrations as high as 30,000 parts per million (ppm) for this 4-month, \$2.3 million contract. This was the first ECRA cleanup action in New Jersey.

- Satisfied an approved NJDEPE ECRA cleanup plan under RCRA guidelines.
- Negotiated revisions to a soil disposal strategy to allow half of the soils to be disposed of as industrial waste rather than hazardous waste, resulting in approximately \$250,000 in savings for the client.
- Supported site restoration by excavating and disposing of 10,000 yd³ of contaminated soils, constructing stormwater retention basins, installing storm sewers, and upgrading and paving the site.

RCRA Closure, Various Locations, Allied Signal, Inc., Project Manager. Directed the decontamination and closure of two lead battery manufacturing facilities in conformance with an agency-approved RCRA closure plan for this 4-month, \$500,000 contract.

RA, Rhode Island, Olin Chemicals Corporation, Project Manager. Supervised PRP-funded site cleanup and closure in conformance with an agency-approved Superfund Amendments and Reauthorization Act of 1986 (SARA) closure plan under this 5-month, \$1.2 million contract.

NCP Removal Program Activities, TAT Contract, New Jersey, New York, Puerto Rico, and Virgin Islands, EPA, Regional Manager. Overall technical and management responsibility for WESTON's TAT (under contract to EPA) activities during site investigations (SIs), alternatives evaluations, cleanup actions, and contractor monitoring at four tetrachlorobenzo-p-dioxin (TCDD)-contaminated sites in Newark, NJ. Designed an on-site filtration system to control runoff from one industrial site where TCDD concentrations were in excess of 3,000 parts per billion (ppb). Completed a feasibility study (FS) of 99 different alternatives for treating the TCDD-contaminated soil and scrap metal at this site.

Hazardous Waste Remediation Projects, Various Locations, Multiple Clients, Construction/Remediation Manager. Managed hazardous waste remediation projects and other turnkey wastewater and water treatment facilities. Successfully managed lagoon and landfill closures, wastewater treatment, groundwater pump-and-treat systems, excavation, thermal destruction, and building decontamination/demolition.

EPA Technical Assistance Team (TAT) Program, Various Locations, EPA Region II, Program Manager. Manager 14 multidisciplinary professionals in completing more than 500 different assignments, including emergency responses to oil and hazardous spills and cleanups, evaluation and design of alternative and innovative cleanup strategies, and construction management of RAs.

Multidisciplinary Projects, Various Locations, Multiple Clients, Project Engineers. Completed various project engineering assignments related to air and water pollution control engineering, hazardous waste management, and liaison work with environmental regulatory

Key Projects (Continued)

authorities. Developed recommendations for optimum disposal techniques for 17 U.S. Army depots and ammunition plants contaminated with propellants, explosives, and pyrotechnics.

Implementation of Air Pollution Regulations, Philadelphia, PA, Multiple Clients, Public Health Engineer. Provided engineering expertise for the implementation and maintenance of Philadelphia's air pollution regulations with various industrial facilities in the city.

Site Closures and Remediation, Picatinny Arsenal, New York, USACE, Program Manager. Directed work plans, closure plans, and cleanups at numerous UST and storage/disposal sites containing OEW and HTRW wastes. UXO clearance activities were required for many of the site areas.

Remediation of Contaminated Areas, Anniston Army Depot, Alabama, USACE, Huntsville Division, Senior Engineer. Performed field investigations, sampling, analysis, evaluation, and remediation of contaminated soils for off-site disposal. Directed field construction inspection and engineering activities.

Design of Upgraded Hydrant Fuel System and Civil/Site Improvements, Delaware, Dover AFB, Design Supervisor. Directed the preparation of design drawings, specifications, and cost estimates for a new Type III U.S. Air Force (USAF) standard fuel delivery system. Work included engineering analysis of various remedial technologies to clean up existing soils and groundwater contamination.

Publications and Presentations

Hammond, J.W. 1982. "An Evaluation of In Situ Groundwater Ion Exchange Barriers for Control of Low-Level Radioactive Wastes." Proceedings of the AIChE Summer National Meeting, Cleveland, OH.

Hammond, J.W. 1982. "A Treatment System for Control of Radioactive Wastewaters Generated During Cleanup of the Canonsburg, Pennsylvania, UMTRAP Site." Proceedings of the 37th Annual Purdue Industrial Waste Conference, West Lafayette, IN.

Hammond, J.W. 1982. "Design of a Movable Treatment System for Hazardous Runoff Treatment." Proceedings of the 1982 Hazardous Materials Spills Conference, Milwaukee, WI.

Hammond, J.W. 1979. "Analysis of Performance Reliability for a Two-Stage Wastewater pH Control Facility." Proceedings of the 7th Annual Industrial Pollution Conference, Philadelphia, PA.

Hammond, J.W. 1977. "A Regulatory Criteria for Emissions From Vapor Recovery Systems at Bulk Terminals." Proceedings of the 70th Annual APCA Conference, Toronto, Ontario.

JOEL S. LINDSAY, P.E., L.S.P.

Qualifications Summary

- Over 10 years of professional experience.
- Responsible for management and implementation of RAs/investigations for hazardous waste sites under CERCLA, RCRA, and MCP requirements.
- Oversight and direct implementation of design, construction startup, and operation of numerous remediation projects involving soil removal and disposal/recycling, product/groundwater pumping, and treatment/SVE systems.
- Managed a team of three project engineers and additional junior staff in implementation of these projects.
- Involved in proposal writing and associated marketing for assessment/remediation projects.
- Extensive experience in managing/conducting MCP response actions including LRAs, IRAs, RAMs, and all stages of Comprehensive Response Actions.
- Wrote numerous RAO statements of different types, and dealt with MCP risk characterization methodologies/formulation of strategies for implementation of site use restrictions under the MCP.
- Conducted training for Certified Wastewater Treatment Plant Operators.

Registration

Registered Professional Engineer (Environmental) in the Commonwealth of Massachusetts, PE/MA No. 37820 (1994)
Licensed Site Professional (LSP) in the Commonwealth of Massachusetts, LSP/MA No. 4361 (1997)
Certified Wastewater Treatment Plant Operator—Grade 2M Full, in the Commonwealth of Massachusetts (1993)

Fields of Competence

Project management of hazardous waste site investigation (SI) and remediation projects. Includes SI activities such as monitoring well installation/sampling, soil gas sampling, indoor air sampling, and hazard evaluation and risk assessment under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA) and Massachusetts Contingency Plan (MCP) guidelines. Management, implementation, and design of remediation projects, including use of technologies such as groundwater extraction and treatment, soil vapor extraction (SVE)/bioventing, air sparging, and removal actions. Underground storage tank (UST) management including tank removal and replacement and compliance assurance and permitting. Air and wastewater discharge permitting for industrial facilities.

Credentials

M.S., Environmental Engineering—University of California at Berkeley (1989)
B.A., Geology (Cum Laude)—Princeton University (1985)
40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3), Clean Harbors, Inc. (1990)
8-Hour Hazardous Waste Refresher Course, OSHA 29 CFR 1910.120(e)(8), WESTON (1998)
Bloodborne Pathogens Training, OSHA 29 CFR 1910.1030
First Aid/CPR, American Red Cross

Employment History

1997-Present WESTON
1991-1997 Rizzo Associates, Inc.
1990-1991 Camp Dresser & McKee, Inc.
1986-1989 Wahler Associates
1985-1986 Hallenbeck and Associates

Key Projects

Various Removal Actions, Fort Devens, MA, U.S. Army Corps of Engineers (USACE), New England District, Project Manager and LSP of Record. Provide management and LSP services for removal actions and related site assessment and construction work at Fort Devens. Includes tank removals and other remedial actions at numerous locations on the former base.

MCP SI, Gardner, MA, Confidential Industrial Client, Project Manager and LSP of Record. Provide management of MCP SI of a 100-year old industrial facility. Conducted risk assessment activities and evaluation of remedial options.

Engineering and Technical Support, Housatonic River Site, Pittsfield, MA, U.S. Environmental Protection Agency (EPA) and USACE, Project Lead. Provide technical and engineering support and project management for the removal of polychlorinated biphenyl (PCB)-contaminated sediments/soils from ½ mile of the Housatonic River. Conducted data review and evaluation, prepared a Removal Action Work Plan, and developed a remedial action scope of work/preliminary design for installation of sheet pile barriers to light nonaqueous phase liquid (LNAPL) adjacent to the river.

Leader for preparation of revised draft engineering evaluation/cost analysis (EE/CA) involving data analysis and evaluation and costing of alternatives for remediation and restoration of an EE/CA reach. Partners with USACE New England District (CENAE), EPA Region I, and Massachusetts Department of Environmental Protection (MADEP) routinely to ensure all regulatory goals of the project are attained.

Key member of the EE/CA team that developed technical approach and construction sequence. Currently working with Woodlot, ATS, Avatar, Hart-Crowser, Severson, and Graef Anhalt Schloemer in support of the ½ mile removal and EE/CA completion. Consistently meets cost and schedule goals set by CENAE and EPA, and ensures rapid response to agency requests and changes.

Right-of-Way Assessment and Remediation, Central Artery/Tunnel Project, Boston, MA, Massachusetts Highway Department, Project Engineer. Provided management and technical development and oversight of the environmental assessment (EA) and remediation of over 200 properties being affected by the CA/T project construction.

Design of Groundwater Pump-and-Treat Systems, Various Sites, Multiple Clients, Project Manager. Completed design of groundwater pump-and-treat systems for several chlorinated-solvent-contaminated sites and several oil/gasoline-contaminated sites with free floating product.

Key Projects (Continued)

Methods used included product recovery/air stripping and on-site regenerable granular-activated carbon. Managed construction oversight for system installations.

Soil Vapor Extraction System Design, Various Sites, Multiple Clients, Project Manager. Completed design of multiple SVE systems for chlorinated solvent removal from soil, and managed construction oversight of system installations.

Groundwater Treatment Systems Startup and Operations, Various Locations, Multiple Clients, Project Manager. Implemented startup and operation of multiple groundwater pump-and-treat systems and vapor extraction systems. Managed operation, maintenance, and monitoring of four groundwater remediation systems and two SVE systems, including all DEP and EPA reporting. One SVE site has been brought to closure, and closure is expected at the others in 1997.

MCP Site Assessment and Remediation, Natick, MA, Confidential Client, Project Manager. Managed a multiyear assessment and remediation project at a priority (Tier 1A) MCP site with chlorinated-solvent contamination. Managed simultaneous groundwater pump-and-treat tasks with completion of Phase II CSA. Worked extensively with MADEP personnel in the interpretation and resolution of complex site issues under evolving MCP requirements. Saved long-term remediation costs by conducting fate and transport analysis in conjunction with MADEP.

Bench-Scale Treatability Study for Stabilization of Lead-Contaminated Soil, Roxbury, MA, Massachusetts Bay Transportation Authority, Senior Project Engineer. Conducted bench-scale treatability study of stabilization of lead-contaminated soil with Portland cement. Results and scaled-up costs compared favorably with commercial stabilization products. Full-scale implementation was conducted successfully, resulting in beneficial use of previously abandoned urban site.

Soil Impoundment Design, Middleboro, MA, Confidential Industrial Client, Senior Project Engineer. Developed an MADEP-approved design for soil impoundment to contain wetland sediments contaminated by heavy metals and cyanide.

Compliance Audit and Air Permitting, Massachusetts, Confidential Manufacturer, Senior Project Engineer. Completed industrial compliance auditing and air discharge permit submittals (Comprehensive Plan Applications), including best available control technology (BACT) analysis, for a screen printing facility and an electrical component manufacturer in Massachusetts.

Site Characterization and Remediation, Various Locations, Multiple Clients, Project Geologist. Conducted site characterization and remediation projects, underground tank investigations, and baseline groundwater studies in the San Francisco Bay Area. Supervised installation and sampling of numerous groundwater monitoring wells under strict quality control (QC) guidelines, including use of dedicated bladder pumping systems.

Key Projects (Continued)

Geological and Geotechnical Soil Investigations and Inspections, Various Locations, Multiple Clients, Geologist. Conducted logging of test trenches and soil borings, surface geological mapping and investigation, and conducted standard soil tests in field and laboratory. Projects included geological and soil investigations, geotechnical inspections, landslide investigations, and fault hazard studies.

Wastestream Analysis, and Air and Wastewater Permitting, Massachusetts, Confidential Manufacturer, Senior Project Engineer. Completed wastestream analysis, followed by preparation of an air discharge permit submittal, and an industrial wastewater discharge permit for an electrical component manufacturer in Massachusetts.

Phase I and Phase II Investigations, Various Sites, Multiple Clients, Project Manager. Managed and implemented numerous Phase I and Phase II SIs at sites in Massachusetts. Characterized UST releases and spills involving petroleum compounds and industrial solvents.

National Pollutant Discharge Elimination System (NPDES) Permit Preparation, Groundwater Treatment System Discharges, Multiple Sites in Massachusetts, Project Engineer. Prepared NPDES permits for discharge of treated groundwater to surface water at sites in eastern Massachusetts. Included treatment systems for petroleum-contaminated groundwater and for chlorinated-solvent-contaminated groundwater.

JOSEPH D. MASTONE

Qualifications Summary

- Twenty years of professional experience in project and program management.
- Eleven years of experience in environmental analytical chemistry.
- Seventeen years of experience in trace analysis.
- Managed and coordinated a dedicated multidisciplinary staff of up to 50 people in support of EPA Region I Superfund site activities.
- Managed and coordinated the operation of analytical chemistry laboratories for water, hazardous waste, soil/sediment, and air toxic analysis in support of SIs.
- Provided analytical support, methods development, and management of research activities for an aquatic toxicology laboratory.
- Qualified as expert witness in federal, military, and various municipal courts.
- Managed and developed a hazardous waste consulting section with a 19-person staff, providing technical, administrative, and management support to local, state, federal, and industrial clients for site assessments to feasibility studies.
- Managed a 30-person full service environmental consulting office providing technical, management, and administrative support to local, state, federal, and industrial clients.

Fields of Competence

Program, project, office, and laboratory management; large project and dedicated program management; environmental analytical chemistry; development of specialized analytical procedures; sampling, monitoring, and instrumentation; movement and degradation of chemical contaminants in the environment; emergency response and removal operations; handling and disposal of hazardous chemicals and wastes; forensic chemistry (characterization of trace physical evidence); expert testimony.

Credentials

M.S., Forensic Chemistry—Northeastern University (1983)
 M.A., Chemistry—Boston University (1974)
 B.S., Chemistry—Bates College (1970)
 American Chemical Society
 Association of Official Analytical Chemists
 Society of Environmental Toxicology and Chemistry
 40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3), WESTON (1987)
 First Aid/CPR, American Red Cross
 Site Health and Safety Coordinator Training Course, OSHA 29 CFR 1910.120(e)(4), WESTON

Employment History

1987-Present	WESTON
1986-1987	ERT—A Resource Engineering Company
1984-1986	Environmental Research and Technology
1983-1984	Springborn Bionomics
1979-1983	EG&G Bionomics
1977-1979	U.S. Army, Criminal Investigation Laboratory
1974-1977	Massachusetts Department of Public Safety Chemical Laboratory
1972-1974	Boston University (Graduate Student)
1970-1972	U.S. Army (Military Police, Active Duty)

Key Projects

GE/Housatonic River Project, Pittsfield, MA, U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE), Project Manager. On the GE/Housatonic River project, managed and coordinated operations of multiple, simultaneous task orders to manage data collection, risk evaluation, and oversight of design and remediation. Within 90 days of award, prepared site-specific planning documents, established a fully equipped local project office, contracted and established on-site field laboratory, initiated data collection activities for removal reach adjacent to GE facility and in the lower Housatonic River. Reviewed 200 site-specific reports prepared over 10 years. Supervised potentially responsible party (PRP) investigation and remediation activities at 12 areas within and around the GE facility.

Site Assessment and Response Programs, Superfund Technical Assessment and Response Team (START) Contract, Burlington, MA, EPA Region I, Program Manager. Managed a 50-person multidisciplinary staff providing support to EPA's Site Assessment, Emergency Response, Removal, and Chemical Emergency Preparedness and Prevention Programs under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Clean Water Act (CWA), Clean Air Act (CAA), and Oil Pollution Act (OPA). Technical activities included site, facility, and release investigations; evaluation of sites for removal actions or listing on the National Priorities List (NPL); development of health and safety, sampling and analysis, quality assurance and quality control (QA/QC), air monitoring, and work plans; collection, analysis, validation, and evaluation of multi-media environmental samples; risk assessments; engineering and cost analyses; and chemical safety audits. During the first 2 years of a 3-year base period, \$20 million contract, START staff performed 217 Site Inspection Prioritizations, 76 Site Inspections, 7 Preliminary Assessments, 98 Removal Assessments, 21 Emergency Responses, 78 Removal Actions, 10 Chemical Safety Audits, and 1 Hazard Ranking System package.

Site Assessments, Alternative Remedial Contracting Strategy (ARCS) Contract, Various Locations in New England, EPA Region I, Site Assessment Coordinator. Responsible for overall management and coordination of a multi-office, multidisciplinary staff to provide support to the EPA Region I Preremedial Program. This \$6 million program consisted of seven work assignments involving over 300 sites throughout New England. The program was a preliminary screening process to establish site priorities and assess the potential for inclusion on the NPL. Two WESTON/ARCS work assignments were used in pilot studies to evaluate the Superfund Accelerated Cleanup Model, a new integrated approach to assess hazardous waste sites, streamline the Superfund process, and focus federal resources to clean up the worst sites first. The Environmental Priorities Initiative Program represented an integrated Resource Conservation and Recovery Act (RCRA)/CERCLA approach to assess 73 active and inactive RCRA facilities. The Combined Site Assessment initiative incorporated key elements of the CERCLA, RCRA, and Removal Program at eight active and inactive RCRA facilities. Activities included work plan preparation, budget development, and QA/QC oversight of deliverables.

Key Projects (Continued)

Analytical Services and Quality Assurance (QA), Environmental Services Assistance Team (ESAT) Contract, Burlington, MA, EPA Region I, Program Manager. Managed and administered 25-person dedicated staff for 3 years with an average revenue of \$1.5 million. The ESAT Program provided technical and management support to the Superfund Program, the RCRA Program, and other non-Superfund EPA Analytical Programs. Responsible for client interaction on a daily basis, review of deliverables and oversight of project financials. Support task areas included analytical services (field and laboratory), data review/validation, and QA/QC activities. Specific activities include preparation and review of quality assurance project plans (QAPPs); preparation, research, and review of statistical analysis system (SAS) methods and requests; coordination, oversight, and auditing of sampling and investigation plans and activities by contractors and/or responsible parties; and auditing and technical evaluation of Contract Laboratory Program (CLP), state, and responsible parties laboratories.

Emergency Response and Removal, Technical Assistance Team (TAT) Contract, Burlington, MA, EPA Region I, Program Manager. Managed and administered a 20-person dedicated staff. TAT provided multidisciplinary staff support to EPA's Emergency Response, Removal and Prevention Program under Superfund and the Clean Water Act to address environmental emergencies and respond to chemical spills (approximately \$10 million for 4 years). Responsible for client interaction on a daily basis, review of deliverables, and oversight of project financials. The TAT staff was available around the clock, 7 days a week to provide direct emergency response support and monitoring services at oil spills and other hazardous substances releases. TAT conducted site investigations, performed environmental sampling and field screening analysis, and was responsible for cost tracking and monitoring of clean up activities during emergency removal operations. TAT conducted first responders and emergency preparedness training, performed SPCC inspections and chemical safety audits, assisted EPA in the identification and implementation of innovative treatment/disposal options, and coordinated the development and implementation of community relations plans.

Hazardous Materials Assessment, Various Locations, Massachusetts Water Resources Authority (MWRA), Project Manager. Managed basic task order agreement (\$400,000 over 3 years) with MWRA. Responsible for work plan and budget development; staff identification and mobilization; task execution; deliverables preparation; project administration, documentation, and contract compliance. Technical assignments included site investigations; risk assessment of pelletized sludge; preparation of specification for disposal of contaminated soil; identification and inventory of hazardous materials on MWRA property; development of a risk assessment computer model; and emergency response and support to suspected releases of unknown contaminants at construction sites.

Ecological Assessment, Various Locations, Confidential Client, Analytical Chemistry Program Manager. Conducted two long-term (1 to 2 years) field programs involving a confidential pesticide manufacturer, which studied ecological effects of synthetic pyrethroid pesticide application to cotton and rice fields. Responsibilities included: selection of appropriate study areas, baseline ecological and chemical characterization of the study areas, development of sampling and analysis plan, and QAPP.

Key Projects (Continued)

Site Assessment, Massachusetts, Confidential Client, Associate Program Manager. Project involved pre-construction site characterization of a proposed coal gasification plant. Responsibilities included preparation of site sampling, schedule, and analytical support, quality assurance plan, coordination of the analytical support during the 18-month study, and preparation of interim summary and final reports of the analytical results. Project involved the analysis of over 1,000 water and soil samples for a wide range of parameters.

Ambient Air and Sludge Sample Analysis, Providence, RI, Publicly Owned Treatment Works (POTW), Task Manager. Provided analytical support for ambient air monitoring activities. Interacted with Rhode Island Department of Environmental Management (RIDEM) and EPA in preparation of site sampling schedule and QAPP. Project involved the analysis of more than 300 ambient air and sludge samples for volatile organic compounds (VOCs) and selected metals during a 3-month period.

Remedial Investigation (RI), Massachusetts, Department of Environmental Quality Engineering, Field Investigation Team (FIT), Task Manager. As Lab Manager, supervised analysis which included more than 2,000 water, soil, waste, and air samples collected during RI activities over a 2-year period.

Groundwater Contamination Assessment, Northwest United States, Burlington Northern Railroad, Project Manager. Provided ongoing support of investigative and monitoring activities to assess the contamination of the groundwater by polynuclear aromatic hydrocarbons (PAHs) from several inactive and active creosoting facilities located throughout the northwest United States for the Burlington Northern Railroad. Analysis involved more than 400 water samples for PAHs at the parts-per-trillion level for 3 years. In addition, the analytical support also involved the analysis of more than 1,500 soil and water samples for a wide range of parameters.

Groundwater Contamination Assessment, Various Locations, Reilly Tar & Chemical Company, Project Manager. Provided laboratory support for the monitoring activities to assess groundwater contamination by PAHs at an inactive manufacturing site.

Water Treatment Facility Assessment, Minnesota, City of St. Louis Park, Project Manager. Provided laboratory support for the monitoring activities to assess the performance of a water treatment facility using carbon filtration for the removal of PAHs from contaminated groundwater.

Feasibility Study (FS), Land Treatment Utilization Techniques, Wilmington, MA, Confidential Client, Project Manager. Provided laboratory support for monitoring activities to determine the feasibility of using various land treatment techniques. The analysis involved more than 300 soil, water, and air samples for various parameters, including pentachlorophenol and PAHs.

Ambient Air Monitoring, Canada, Multiple Clients, Task Manager. Provided laboratory support for ambient air monitoring activities around automotive manufacturing facilities. Project

Key Projects (Continued)

involved the analysis of volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) from ambient air.

Prototype Incinerator Test Burns, Wilmington, MA, Confidential Client, Task Manager. Analytical support for a series of test burns for a prototype incinerator for hazardous wastes.

Project involved the characterization of the waste feed, the incinerator residue, and stack gas testing.

RIs, Nationwide, Multiple Clients, Task Manager. Analytical laboratory support for ambient air monitoring and RI activities around active and inactive NPL sites throughout the United States.

Polychlorinated Biphenyl (PCB) Contamination/Remedial Action (RA), New Bedford, MA, Confidential Client, Task Manager. Project involves PCB contamination of an electrical supplies manufacturing plant site and the subsequent implementation of an EPA remedial action plan (RAP). Responsible for providing analytical support for PCB measurements in soil, water, oil, and other materials as required. This project involved the analysis of more than 1,500 samples during a 3-year period.

Analytical Support for Aquatic Species, Wareham, MA, Chemical Manufacturers Association, Task Manager. EPA Test Standard Program for the Chemical Manufacturers Association involving phthalate esters. Responsibilities included development and validation of an analytical scheme capable of providing low parts-per-billion (ppb) detection levels of 14 selected phthalates in fresh and salt water; development and implementation of a comprehensive interlaboratory QA program; and coordination of the required analytical support for eight aquatic species. This project involved the analysis of approximately 3,000 samples during a 2-year period.

Aquatic Toxicity Testing, Wareham, MA, Multiple Clients, Task Manager. Analytical chemistry support to standard aquatic toxicity tests involving various compounds.

Synthetic Pesticide Study, Wareham, MA, Multiple Pesticide Manufacturers, Analytical Chemistry Program Manager. Two long-term (1 to 2 years) field programs involving pesticide manufacturers, which studied ecological effects of synthetic pesticide application to cotton and rice fields.

RICHARD A. MCGRATH

Qualifications Summary

- Over 25 years of broad-based experience in the management of multidisciplinary teams conducting projects in the environmental/health and safety field.
- Key senior technical or management role in several hazardous waste site remedial investigations, especially investigations of organic contaminants (PAHs and PCBs) in aquatic and coastal sediments.
- Experience in corporate planning and P&L management as Officer, Regional Manager, and General Manager for three national environmental consulting/engineering firms.
- Formal training in finance and accounting, including working capital/cash flow management, financial statement analysis, capital budgeting, contract negotiation, and A/R management.
- Formal training in Total Quality Management (TQM), including certification as a Quality Education System instructor.

Fields of Competence

Program and project management in both the private and public sectors; nationally-recognized expertise in large, multidisciplinary programs involving multiple subcontractors and simultaneous work assignments. Manager of numerous studies to assess contamination and develop cost-effective remediation goals for contaminated sediment sites in coastal and Great Lakes sediments. Additional areas of expertise include: strategic environmental management; compliance planning and auditing; hazardous waste remediation; coastal ecology; environmental impact assessment; ecological risk assessment; biostatistics and management of contaminated sediments; environmental legislation and regulations.

Credentials

B.A., Biology (Honors) —Northeastern University (1971)
National Science Foundation Fellow—University of Washington (1971)
Graduate Studies, Zoology—University of New Hampshire (1971-1972)

Employment History

1999-Present	WESTON
1993-1999	ENSR Consulting and Engineering
1992-1993	Science Applications International Corporation
1991-1992	Battelle Memorial Institute
1988-1991	ABB Environmental Services
1982-1988	Battelle Memorial Institute
1977-1982	Taxon, Inc.
1975-1977	Boston Edison Company
1972-1975	National Marine Fisheries Service

Key Projects

Sediment Contamination Study, Wisconsin, Murphy Oil Company USA, Inc., Project Manager. Performed a study of sediment contamination allegedly resulting from the operation of an oil refinery in the Great Lakes basin. Management of an independent field/analytical program to evaluate the validity of data developed by the state regulatory agency. Critically reviewed

Key Projects (Continued)

reports and recommendations produced by the state. Presented results and negotiated with regulators to reduce client liability.

Landfill Design and Permitting, Walpole, MA, Massachusetts Water Resource Authority, Program Manager. Managed a \$4M project to site, design, and permit the Massachusetts Water Resource Authority minor residuals landfill in Walpole, Massachusetts. Management of internal multidisciplinary project team involving planners, hydrogeologists, engineers, and ecologists as well as a team of subcontractors.

Contaminated Sediments Study, St. Louis River, Minnesota, Confidential Forest Products Company, Project Manager. Performed a study of the St. Louis River (Minnesota) to evaluate the potential liability of a paper mill for contaminated sediments.

Ecological Marine Survey, Yabucoa Bay, Puerto Rico, Sun Oil, Project Manager. Managed an ecological survey of Yabucoa Bay (Puerto Rico) to demonstrate lack of impact of a refinery discharge on the marine environment.

Site Assessment and Remediation Support Services (SARSS) Program, Various Locations, State of Massachusetts Department of Environmental Protection (MA DEP), Program Manager. Management and oversight responsibility for an annual budget of \$2M and a project team of several subcontractors, conducting up to 20 simultaneous work assignments in the areas of site investigation, remedial design, risk assessment, and policy/program support. Specific work areas included site investigations at numerous known or suspected hazardous waste sites across Massachusetts, various program support assignments to implement portions of the Massachusetts Contingency Plan, and design of groundwater treatment systems.

Ecological Risk Assessment, New Bedford Harbor Superfund Site, Massachusetts, EPA, Project Manager. Design and implementation of a developmental probabilistic methodology for demonstrating prior damage and determining cleanup levels for PCBs and heavy metals that would be protective of natural resources in the Harbor. Programmatic support to EPA at public hearings.

\$20M Technical Support Contract, Nationwide, U.S. EPA Office of Marine and Estuarine Protection, Program Manager. Management responsibilities for all aspects of this major LOE contract involving over 40 subcontractors conducting over 100 active work assignments. Technical liaison for EPA Regional Offices, with the responsibility for design and management of projects supporting the regional EPA mission in ocean disposal, estuaries, and dredged material management.

Field Sampling Program, New Bedford Harbor Superfund Site, EPA, Program Manager. Managed field collection and hydrodynamic/sediment-transport/food-chain modeling at the New Bedford Harbor Superfund Site. Designed and implemented a complex field sampling program to document contamination into the Harbor and to provide input data for the calibration and

Key Projects (Continued)

validation of numerical models to simulate the fate of PCBs and heavy metals under a variety of remedial action scenarios. Managed and coordinated several subcontractors and provision of technical guidance and support to EPA.

Survey of Dredge Material Management Sites, Various Locations, EPA, Project Manager. Studies to select, designate, and monitor ocean-dredged material disposal sites. Managed a large number of projects spanning a wide variety of environmental issues related to disposal and management of dredged materials. Examples of specific projects include site selection studies at Cape Canaveral, Port Everglades and Tampa, Florida; monitoring of Tampa Site 4 and Dam Neck, Virginia disposal sites; preparation of environmental impact statements to support designation of Tampa Site 5 and various sites in the Western Gulf of Mexico; and preliminary studies to select deepwater disposal site for San Francisco Bay. Managed and prepared a guidance document and training program to support delegation of site designation authority from EPA Headquarters to the regional offices.

Various Projects in Support of the OSV *Peter W. Anderson*, EPA, Various Locations, Project Manager. Management and conduct of projects supporting the mission of EPA's ocean-going survey vessel. Specific project areas included development of a protocol for survey plans and reports, a related protocol for sample and data tracking, and a project to integrate and automate data acquisition systems.

Marine Resources Study, Various Locations, Multiple Clients, Project Manager. Managed various projects to evaluate the impact of human activity on marine resources. In a series of projects spanning over 15 years, design and management of programs to evaluate the impact of human activity on all three coasts. Specific project examples include assessment of the impact of Pilgrim, San Onofre, and Indian Point nuclear power stations; development of data to support Section 301(h) variance petitions for POTWs in Swampscott, Salem, Boston, Gloucester, and New Bedford, MA; and design of data management systems to support oversight of oil exploration activities on Georges Bank and the Atlantic Ocean Outer Continental Shelf.

Publications and Presentations

Author or co-author of numerous articles, technical publications, and reports. Technical reviewer for a large number of documents in a wide variety of technical disciplines. Invited presentations at both national and international conferences.

ROBERTO RICO

Qualifications Summary

- More than 20 years of experience in private, federal/state/local engineering/construction projects as program, project and construction manager/superintendent/foreman/QA technician.
- More than 15 years of experience managing multidisciplinary construction projects. Extensive experience directing field operations/human resources/equipment/general construction administration/management.
- Responsibilities include planning/managing/supervising field work; scheduling/change orders/budget and cost controls; subcontractor procurement/management; establishing/maintaining owner-engineer-contractor relations; MBE/DBE/WBE compliance; QC of work performed; monitoring adherence to project specifications.
- Extensive experience with local, state and federal agencies: USACE, FAA, FHA, and MWRA.
- Over 7 years experience in hazardous waste construction remediation, including UXO and chemical warfare agents.
- RCRA closures; NPL sites cleanup; water/wastewater treatment facilities; construction/rehabilitation of highways, drainage systems, airport runways and taxiways, sanitary sewers and water mains, landfills.

Fields of Competence

Construction management of civil, heavy and environmental work; potable water and wastewater treatment facilities; water and wastewater supply and collection systems; bridges; highways; landfill construction and closures; commercial and industrial buildings; groundwater treatment facilities and construction remediation/hazardous waste work; unexploded ordnance and chemical warfare agent detection and remediation work.

Credentials

B.S., Natural Sciences—Universidad de la Republica, Uruguay (1972)
Soil Mechanics and Materials Testing Course Work, Northern Virginia Community College (1974-1975)
Project Management/Supervisory Training, Associated General Contractors of America, Wellesley, MA Chapter (1988)
Construction Management Training, U.S. Department of Transportation (DOT)/CIANBRO Corp. (1982-1983)
Project Management Training, WESTON (1990)
40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3), WESTON
8-Hour Hazardous Waste Refresher Course, OSHA 29 CFR 1910.120(e)(8), WESTON
Site Health and Safety Coordinator Course, OSHA 29 CFR 1910.120(e)(4), WESTON (1992)
Site Health and Safety Training Manager's Refresher Course, OSHA 29 CFR 1910.120, WESTON
Associated General Contractors of America (AGC), New Hampshire Chapter
Federal Procurement Management, WESTON (1994)
Federal Program/Project Management, WESTON (1995)
Construction Quality Management, U.S. Army Corps of Engineers, Waltham, MA (1995)
Partnering Techniques/Management, Associated General Contractors of America, Concord, NH (1996)
Changes, Claims and Disputes Management, School of Business and Public Management, George Washington University, Washington, DC (1996)
American Defense Preparedness Association (ADPA)
Society of American Military Engineers (SAME)

Employment History

1989-Present WESTON
1988-1989 Methuen Construction Co., Inc.
1985-1988 Roubin and Janeiro, Inc./Espina Stone Co., Inc.
1982-1985 Cianbro Corporation
1977-1982 Moor Green Builders, Inc.
1972-1977 Law Engineering Testing Co.

Key Projects

Hazardous, Toxic and Radioactive Waste (HTRW) Remediation Program, Various Sites Throughout New England, U.S. Department of the Army, New England Division, U.S. Army Corps of Engineers (USACE), Waltham, MA, Deputy Program Manager/ Construction Manager. Responsible for overall financial performance and day-to-day management of operations under two Remedial Action Contracts valued at \$60 million over 5 years. Currently at the end of the second option year. Have undertaken and successfully completed over 20 discrete assignments valued at \$15 million. Examples of work performed are as follows:

- **Barnum Road Salvage Yards.** This 8-acre parcel at Fort Devens, MA, had been used for cannibalization of army motor vehicles for several decades. Generally, soils were heavily contaminated with petroleum-based compounds. Scope of work included systematic excavation of all contaminated soils, field screening analysis, and treatment of removed soils. Treatment consisted of site-batching polluted soils into an asphaltic mixture that was subsequently reused at same site for parking lot and roadway sub-base materials, then paved with bituminous concrete. A complex stormwater drainage system and collection basin were constructed to mitigate runoff from the newly-paved 8-acre parcel. Project was completed under budget and ahead of ambitious 120-day schedule. Approximate work value is \$3 million.
- **Sudbury Annex Training Area.** RCRA closure of a 5-acre landfill area, including excavation of Army research laboratory waste (2,000 yd³), cut and fills totaling 50,000 cubic yards, installation of multilayer membrane system, excavation of 12 separate areas containing contaminated soils, also demolition and disposal of pesticides-contaminated building. Project was completed under budget and ahead of schedule. Approximate work value was \$2.5 million.
- **Mirror Lake.** Work consisted of locating GPS magnetic anomalies in a 30-acre spring-fed pond, unexploded ordnance detection and avoidance, and removal by diving and retrieving of approximately 60 suspect drums with partially unknown contents, characterization and disposal of same. Project was completed during the months of November and December, under budget and on schedule. Approximate work value was \$500,000.

Through January, 1997, managed HTRW operations logged in excess of 100,000 work hours with no lost-time incidents or injuries.

Key Projects (Continued)

Aberdeen Proving Ground (APG) Environmental Remediation Contract, Aberdeen, MD, USACE, Baltimore District (Through the CEAAO), Program Coordinator/Senior Construction Manager. Responsible for all construction services under a Remedial Action Contract valued at \$20 million over 3 years. Work included: preparation of Work Plans, Sampling and Analysis Plans, Site Health and Safety Plans, Emergency Response Plans, and planning and execution of remedial actions on various multidisciplinary Delivery Orders simultaneously. Responsible for activities from start to finish, interaction and coordination with over twenty independent military and civilian regulatory agencies, including: CEAAO, Directorate of Safety, Health and the Environment (DSHE), U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), U.S. Technical Escort Unit (TEU), Combat Systems Testing Agency (CSTA Range Control), Edgewood Research, Development, Engineering Center (ERDEC), U.S. Environmental Protection Agency (EPA), Maryland Department of the Environment (MDE) and others. Examples of work performed are as follows:

- **Delivery Order No. 3, Graces Quarters Disposal Area.** This former disposal area contained subsurface ordnance disposal pits in danger of slumping into the Gunpowder River. Remedial action included identification and removal of unexploded ordnance from the surrounding area, locating subsurface pits using ground penetrating radar (GPR) and Surface Towed Ordnance Locating System (STOLS), and excavating disposal pits within a determined distance of the shoreline cliff face.
- **Delivery Order No. 15, Old O Field Groundwater Treatment Facility.** The disposal site at Old O Field consisted of approximately 5 acres of excavated pits containing unexploded ordnance, chemical warfare agent filled ordnance and munitions, compressed (CWA) gas cylinders, pyrotechnics, explosives, obscurant smoke and other incapacitating chemical agents and materials. Work consisted of survey, identification and removal of surface and subsurface unexploded ordnance, construction of access roadways, and design and construction of 30 gpm groundwater treatment facility for the remediation of contaminated groundwater. Chemical contaminants of concern were toxic compounds (derived principally from the partial degradation of mustard and nerve agents) and explosives. Responsibilities included installation of 200 wood piles to support the shallow foundation for the groundwater treatment facility, erection of a prefabricated building structure, mechanical installation of 22 different treatment systems as process train, electrical, instrumentation, and on-line bio-monitoring system, a 2,000 foot outfall into the Chesapeake Bay, site air monitoring and physical security. The project was completed on budget and ahead of an ambitious 150-day work schedule. Approximate value of the work was \$8 million.
- **Delivery Order No. 4, Carroll Island.** The Carroll Island disposal site was used for disposal of solid waste from testing operations during the 1940s to early 1970s. Wastes were deposited in and around the marsh area in pits, which were used for waste disposal throughout the site; one of the pits is open at this time. USACE's plan of action is removal of the surface debris, including any exposed munitions, from the marsh area and adjacent shoreline; identification of other disposal pits; capping of the open pit; and

Key Projects (Continued)

installation of erosion and sedimentation controls.

- **Delivery Order No. 5B, 26th Street Dump.** The 26th Street Dump site is a former burning and dumping area containing approximately 150 drums (of unknown origin) and an incineration area containing glass vials and medical waste. There presently exists a potential impact on surface waterways due to the proximity of the area to the Bush River.
- **Delivery Order No. 6, J-Field.** The disposal site at J-Field, near the Gunpowder River, was used throughout the history of Edgewood Arsenal as an area for disposal, open detonation of suspect CSM-filled ordnance, and weapons testing. Due to the proximity of the site to marsh areas and the Gunpowder River, and the potential for contaminant migration, USACE will install erosion and sedimentation controls (riprap), and remove surface debris, including drums and the firing point made of Class A armor.
- **Delivery Order No. 7, Beach Point.** The Beach Point drum rack site consists of four drums and a tank of unknown materials located approximately 50 feet from a wetlands area and the Bush River. This area was used as a developmental and testing site for pyrotechnic materials and obscurant smoke chemicals. There has been no active use of the drum area since the 1990s. Under this corrective action, the drums and tank were characterized and removed for disposal.
- **Delivery Order No. 9, G-Field.** WESTON removed approximately 150 drums from an area formerly used for training and impact testing. This area is adjacent to a chemical warfare training site.
- **Delivery Order No. 13, Nike Site.** WESTON is providing interim remediation of a Nike Missile Facility, a launch area where ballistic missiles and warheads were assembled, stored, serviced, and fired. The remedial actions consists of characterization (completed), removal of debris and water, and backfilling the underground structure using remote sampling and removal operations.

Throughout the life of the program, managed operations logged in excess of 300,000 work hours with no lost-time incidents or injuries.

Underground Storage Tanks (USTs) Replacement, Holyoke, MA, Mobil Chemical Company, Construction Manager. Responsible for preparation of technical specifications and contract documents through completion of construction activities. Project consisted of the removal and replacement of four 50,000-gallon, single wall, steel liquid styrene USTs and all related mechanical, electrical and instrumentation systems, as well as a loading/unloading station; installation of four 50,000-gallon, double-walled steel tanks and all related appurtenances. Significantly contaminated soils (styrene, PCBs, metals, etc.) were encountered, characterized, and disposed of during construction. Coordinated production facility shutdown to accommodate construction work. This was a fast-track project, completed within budget in 90 days. Approximate work value was \$2.4 million.

Hazardous Waste Incineration Facility, East Liverpool, OH, Confidential Client, Construction Manager/Quality Assurance Manager. Representing a consortium of lending

Key Projects (Continued)

institutions, conducted random visits and quality assurance inspections of all construction work, checked pre-established milestones for completeness and compliance with contract documents; monitored project schedule and construction progress; and monitored and made recommendations on monthly progress payment requisitions to lending institutions. Approximate work value was \$140 million.

On-Site Management, Pawtucket Cogeneration Power Plant, Pawtucket, RI, Confidential Client, Construction Manager. Provided on-site management during startup, reliability and performance testing of a natural gas-fired, 60-Mw co-generating facility, including directing monitoring of testing procedures and methods, scheduling and coordination, and communications between owner-engineer-contractor.

Wastewater Treatment Plant Upgrade, New Hampshire, Town of Littleton, Construction Manager. Responsible for upgrade of existing primary treatment facility to a secondary treatment facility including the addition of clarifiers, an orbal oxidation system, ultra-violet disinfection system, and a new solids handling facility. Project was completed ahead of schedule and under budget. Approximate work value was \$6 million.

Construction of Ox Point Drive, Dion Avenue and U.S. Route 1 Sewer Extension and Pumping Station, Maine, Town of Kittery, Project Manager/Construction Manager. Responsible for the installation of 4,000 linear feet (LF) of 8-inch polyvinyl chloride (PVC) sewer pipe and appurtenances; 4,000 LF of 12- and 15-inch pre-insulated PVC sewer pipe and appurtenances; excavation and installation of a cofferdam; construction of a pumping station, including mechanical, electrical, instrumentation; fuel supply system and road reconstruction. Operations also included drilling and blasting 3,000 cubic yards of subsurface granite. Approximate work value was \$1.4 million.

Sewer Rehabilitation at Revere/Chelsea Creek, Charlestown Navy Yard, Boston, MA, MWRA, Project Manager/Construction Manager. Managed the design and installation of two steel cofferdams, at each side of tidal waters to access siphons and brick sewer pipe dating back to 1904. Included high pressure cleaning of vessels, masonry rehabilitation of both structures and relining of twin 48-inch diameter brick vessels via the Insituform method; installation of temporary, low environmental impact roadways for access; and restoration of a protected saltwater marsh. Approximate work value was \$1 million.

Safety Upgrades to Washington National Airport, Washington, DC, FAA, Project Manager/Construction Manager. Managed electrical and signal systems upgrade, reconstruction of aircraft staging areas, extension of taxiways, placement of 10,200 yd³ of 18-inch reinforced concrete pavement, asphaltic pavement profiling, and placement of 21,500 tons of bituminous concrete taxiway pavement, to FAA Standard, 100% accepted. The project was completed working nights only to avoid interference with flying operations. The project was completed ahead of schedule and under budget. Approximate work value is \$3.6 million.

Blue Plains Wastewater Treatment Facility Construction, Washington, DC, Water & Sewer Utility Administration, Project Manager. Responsible for approximately 40,000 yd³ of earthwork, erection of a 22,000 ft² prefabricated steel building, installation of mechanical and

Key Projects (Continued)

yard piping for aeration system, construction of a 200-ft by 200-ft, 2:1 slopes, cast-in-place reinforced concrete-lined sedimentation pond, and placement of 9,200 tons of bituminous concrete paving.

Reconstruction of Van Ness Street, Washington, DC, DPW, Project Manager. Managed excavation, earth retention system, slope stabilization, sewer and water systems, drainage collection system, construction of 4,200 LF of stone walls, granite curbing, placement of 5,000 yd³ of reinforced concrete base roadway, and landscaping.

Rehabilitation and Redecking of Woodrow Wilson Memorial Bridge, Alexandria, VA, Maryland Highway Safety Administration, General Foreman. Project involved the total reconstruction of a mile-long span over the Potomac River connecting Virginia and Maryland at I-495, including the removal of existing cast-in-place decking, refurbishing and reinforcement of steel super-structure, placement and fastening of precast reinforced concrete panels for decking, case-in-place of median barriers, placement and fastening of parapet walls, installation of new electrical and illumination systems, mechanical rehabilitation of draw-bridge span, reconstruction of approach ramps, water supply crossing, bituminous concrete paving of a new deck, roadway signalization, markings and landscaping. Supervised and coordinated crew foremen and a work force of up to 100 individuals. Work was performed at night, maintaining through traffic to minimize interference. Traffic counts were 130,000+/day. Project was completed on budget and ahead of schedule. Labor force at the project logged in excess of 200,000 safe work hours with no lost-time incidents or injuries.

RCRA Landfill Closure, Milford, CT, Confidential Client, Construction Manager. Provided overall site management of RCRA landfill closure, including manpower and subcontractor scheduling and coordination, budget and cost review and controls, and daily reporting to Project Manager. The project, originally scheduled for 3 to 4 months, was completed in 10 weeks and under budget.

Construction of Groundwater Interceptor Trenches, Hartford, CT, Confidential Client, Construction Manager. Provided technical assistance in writing project specifications, on-site management to construct groundwater interceptor trenches and related mechanical systems, manpower/equipment scheduling, and general site coordination.

Grit Removal Facility, New Hampshire, Town of Derry, Project Manager. Responsible for excavation, dewatering, concrete construction, brick and block masonry, installation of Pista Grit System, mechanical and yard piping, heating, ventilation and air conditioning (HVAC) and electrical systems, fuel tank, site work, and asphalt paving.

Southwest Freeway Tunnel, Washington, DC, DPW, Project Manager. Project Manager for upgrading electrical and ventilation systems, reconstruction of median barriers at approaches, signalization, installation of guardrail system, ceramic tiling, reconstruction of stone masonry, 91,000 yd² of pavement profiling, and 13,500 tons of bituminous concrete pavement.

Capitol City Business Park, Washington, DC, DPW, Project Manager. Responsible for earthwork, drainage, sewer and water supply systems, prefabricated pumping station, and road

Key Projects (Continued)

paving. Extensive reconstruction of existing utility systems and approximately 3,000 LF of new street construction due to new business development.

Plant Addition, McMillan Water Treatment Plant, Washington, DC, USACE, QC Technician. Project involved excavation, structural concrete, upgrade of mechanical and yard piping, installation of a new multimedia filtering system, pumps, instrumentation, installation of a computerized monitoring system, and miscellaneous site work.

KELLY MUIR SPITTLER

Qualifications Summary

- More than 14 years of professional experience.
- Four years of experience in EPA CLP deliverable validation, supervision of data reporting, and package construction.
- Staff and subcontractor laboratory supervision.
- Data validation/management (ERPIMS), QA/QC procedures.
- Experience in analytical chemistry: size exclusion chromatography, X-ray diffraction, X-ray fluorescence, and atomic absorption spectroscopy.

Fields of Competence

Environmental analytical data validation and management, laboratory quality assurance/quality control (Q/QC) procedures, and QA Project Plan (QAPP) development for military, federal, and state agencies. Coordination/implementation of EPA Contract Laboratory Program (CLP); validation of EPA CLP deliverables; CLP package construction, review and reporting of data.

Credentials

B.S., Chemistry—Purdue University (1986)
American Chemical Society

Employment History

1987-Present WESTON
1985 Allegheny Valley Hospital
1982-1984 PPG Industries, Inc., R&D Center

Key Projects

Air Force Center for Environmental Excellence (AFCEE) Worldwide Remedial Action Contract (RAC), West Chester, PA, (\$68 Million), Analytical QC/Lead Chemist. Develops QAPP, assists with laboratory procurement, oversees subcontractor analytical laboratory activities, and ensures data validation/correctness for ERPIMS and consistency of results/deliverables among task orders (TOs)/laboratories for this \$68 million contract. Represented WESTON at AFCEE analytical conferences, established network of compliant laboratories, and strengthened chemical interpretation of current AFCEE QAPP. Completed ERPIMS training for prime contractors. Advised procurement staff of specific scope issues that eliminated potential budgetary concerns.

GE/Housatonic River Project, Pittsfield, MA, U.S. Army Corps of Engineers/U.S. Environmental Protection Agency (USACE/EPA), Analytical QC/Project Chemist. Primary author of the sitewide QA plan with adherence to EPA Requirements for QAPP for Environmental Data Operations and other EPA documents for this \$25 million contract. Supervises the electronic loading for all analytical data, coordinates internal

Key Projects (Continued)

review of all data generated at the on-site laboratory to ensure compliance with contract requirements, and orchestrates the tracking of DV services. Subcontractor laboratory coordinator for all biological sampling, which includes extensive interaction with the U.S. Fish and Wildlife Service and 13 commercial environmental laboratories. Worked extensively with EPA Region 1 to develop format and content for a comprehensive QAPP, in accordance with newly implemented agency requirements. The agency approval process was significantly expedited as a result of document compliance with established protocol, and received accolades from the agency requirement author.

PCB Remedial Project, West Chester, PA, Confidential Client, Project Scientist. Performed all electronic data loading for various matrices into a data management system. Conducted data review for all deliverables in accordance with project specifications. Prepared system user manuals for the data loading operating modules for internal training purposes.

Data Validation Projects, West Chester, PA, Multiple Clients, Data Validation Unit Leader. Provided scheduling, coordination, and staff supervision for all data validation projects. Responsible for validation of organic data packages according to CLP guidelines for governmental agencies and commercial clients for completeness and conformity to CLP requirements.

Organic Analyses, Lionville, PA, Multiple Clients, Organic Data Reporting Group Leader. Responsible for coordinating/implementing EPA CLP deliverables package for all organic analysis for EPA, state analytical contracts, and commercial clients within EPA. Validating EPA CLP deliverables for EPA Regions I, II and III, NJDEP, PADEP, and special clients for organic routine analytical services. Document Control Officer and primary contact for WESTON's EPA organics contract.

CLP Data, Lionville, PA, EPA, Assistant Project Scientist. Responsible for CLP package construction, review and reporting of data; intensive review of other external CLP contractual organic data; Document Control Officer and primary contact for WESTON's EPA Organics Contract.

Resins Study-Sampling/Data Analyses, Pennsylvania, Confidential Client, Laboratory Technician. During an internship with this client, prepared samples, collected and analyzed data, and researched new techniques utilizing size exclusion chromatography in the study of resins; worked with paint byproducts in sample preparation; gathered and interpreted data pertaining to atomic absorption spectroscopy. Developed a standard test method for determining size and separation of latex particles; implementing a scanning electron microscope. Used X-ray diffraction to identify and quantify pigments and researched pigments using X-ray fluorescence (XRF) spectroscopy.

JOHN W. THORSEN, P.E., DEE

Qualifications Summary

- Over twenty years of engineering and program/project management experience in the environmental field.
- Hazardous Waste Management—All aspects of RCRA compliance, including facility design and permitting; remedial investigation (RI); concept engineering; design and construction management of remedial action programs at uncontrolled hazardous waste (CERCLA) sites; and UST and aboveground storage tank (AST) evaluation, design, and remediation. Hazardous material spill planning and response.
- Solid Waste Management—Landfill design and permitting; solid waste management planning; compliance evaluations; and policy analysis.
- Water Quality and Water Resources Planning—Development and evaluation of SPCC plans; municipal sewerage facilities concept design and permitting; river basin water quality plans; and sludge management.
- Conference and Seminar Participation—Lectured in hazardous waste regulations; technology; compliance facility design; permitting; spill response and cleanup; remedial action planning; landfill design.

Registration

Diplomate, American Academy of Environmental Engineers
Registered Professional Engineer in the States of Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin and in the Commonwealths of Kentucky and Pennsylvania

Fields of Competence

Solid and hazardous waste management, including identification, permitting, treatment, reutilization, minimization, and disposal. Resource Conservation and Recovery Act (RCRA) and solid waste consulting services in all aspects of generator and treatment, storage, and disposal facility (TSDF) compliance, including permitting of landfills, surface impoundments, treatment units, incinerators, and storage facilities; RCRA facility investigation (RFI)/corrective measure studies (CMS); closure plans; regulatory options analysis; and litigation support. Industrial waste and sludge management facility design and permitting; wastewater facility design and permitting; and water quality management. Remedial engineering; spill containment; emergency response; environmental auditing and assessments of industrial facilities; and health and safety plan development and implementation.

Credentials

M.S., Environmental Planning—Southern Illinois University (1975)
B.S., Civil Engineering—Purdue University (1972)
U.S. Environmental Protection Agency (EPA) Fellowship, University of Wisconsin (1977)
American Institute of Plant Engineers
American Consulting Engineers Council

Employment History

1981-Present	WESTON
1978-1981	State of Wisconsin, Chief, Hazardous Waste Management Division
1977-1978	State of Wisconsin, Supervising Engineer, Municipal Sewerage Systems

Employment History (Continued)

1974-1977 State of Wisconsin, Supervising Engineer, Water Quality Management Section
1972-1974 Southwestern Illinois Regional Planning Commission

Key Projects

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)/ Remedial Investigation/Feasibility Study (RI/FS) Projects, Mound Plant, OH, EG&G Mound Applied Technologies, Inc., DOE, Program Manager. Managed this \$25-million, 5-year program with sitewide CERCLA RI/FS projects at nine operable units involving multiple media and multiple contaminants, including plutonium, uranium, and tritium.

Remedial Action Projects, Various Locations, Multiple Clients, Project Manager. Managed more than 60 remedial action projects under RCRA and CERCLA. Projects involved preliminary assessments and site investigations, regulatory compliance evaluations, sampling and analysis of environmental media, performance of risk assessments, data interpretation, conceptual engineering, detailed design, and cost estimation and specifications.

CERCLA RI, U.S. Army Environmental Center (USAEC), Missouri, Lake City Army Ammunition Plant, QA Manager. Managed QA activities for an RI covering 18 sites and involving geophysical surveys, soil gas surveys, environmental sampling, monitoring well installation and sampling, aquifer testing, groundwater modeling, data interpretation, and development of an RI Report.

RCRA Projects, Various Locations, Multiple Clients, Project Director. Developed Part B permits for landfill facilities for waste management firms, chemical manufacturers, and synthetic gas manufacturers. Managed and conducted activities related to closure plan development, negotiation, and implementation; lagoon liner exemption under Hazardous and Solid Waste Amendments of 1984 (HSWA) for a chemical manufacturer; RFI/CMS studies for chemical manufacturers, solid waste landfills, and a paint manufacturer; lagoon closure; regulatory options analysis under RCRA; and litigation support/expert witness services.

Wastewater Treatment Facility Design, Elgin, IL, North Plant, Fox River Water Reclamation District, Project Director. Managed a 2.0-million-gallon-per-day (mgd) expansion to the North Plant wastewater treatment facility, an activated sludge plant. Design included expansion of primary and secondary treatment, clarification, aerobic digestion, chlorination, dechlorination, and support facilities and the conversion of an anaerobic sludge digester to a sludge holding tank.

Municipal Solid Waste (MSW) Landfill Facility Design/Permitting, Various Locations, Multiple Clients, Project Director. Operations consulting at two landfill facilities; leachate, gas, and surface water management; surveying; interface with state and county regulatory agencies; enforcement support; and expert witness services related to CERCLA and RCRA issues.

Key Projects (Continued)

RI/FSs, Various Locations, Multiple Clients, Project Director. Provided engineering design and RCRA and NPDES permit assistance for waste management facilities in the chemical, metalworking, and waste management industries.

Remedial Action Services, Various Locations, Multiple Clients, Project Manager. Managed 30 projects that involved investigation, feasibility, design, and construction management at uncontrolled hazardous waste disposal (CERCLA) sites, including landfills, drum disposal sites, and uncontrolled hazardous material spills. Waste types included solvents, oil production wastes, polychlorinated biphenyls (PCBs), and laboratory and miscellaneous chemicals.

Hazardous Waste Management, Wisconsin, Multiple Clients, Project Manager. Review and modification of large solid and hazardous waste land disposal sites. Developed technical approach and design and provided construction oversight. Development and issuance of permits that control the construction and operational aspects for a wide variety of hazardous waste TSDFs, including chemical incinerators, pathological incinerators, solvent recovery facilities, and battery reclamation facilities, as well as a wide variety of storage applications.

UST and AST Projects, Various Locations, Multiple Clients, Project Manager/Project Director. Involved commercial and government UST and AST projects. Activities included environmental assessments (EAs), regulatory analysis, strategy development, feasibility analysis, design (plans and specifications), remediation, and retrofit.

UST Retrofit, Project Director. Involved a 26,500-gallon hazardous waste accumulation tank under RCRA to a secondary containment facility. Activities included assessment, closure plan development, and negotiation with the Illinois Environmental Protection Agency (IEPA). Managed detailed retrofit design to provide gravity drainage of an acid rinse water to a sump for collection and pumping to newly designed and installed high-density polyethylene (HDPE) cylindrical tanks.

Environmental Contamination Investigations, Various Locations, Multiple Clients, Project Director. Extensive experience in environmental investigations of improper management and disposal. Work included containment of spilled materials, investigation of the extent of contamination, and cleanup of the contaminated area. Work in this area involved PCB wastes; solvents; arsenic; chromium; lead; ink wastes; agricultural wastes, including fertilizers and pesticides; and plating wastes.

Hazardous Waste Management Division, Program Manager. Responsible for the implementation of Wisconsin's state hazardous waste management program (RCRA), the uncontrolled waste site investigation program, and the hazardous material spill response and cleanup aspects of the program.

Waste Identification/Characterization, Various Locations, Multiple Clients, Project Manager/Project Director. Waste identification and characterization, waste audits to identify wastestreams, and development of wastewater and solid waste compliance plans.

Publications and Presentations

Thorsen, J.W. 1989. "Modeling, Verification, and Public Health Impacts of Airborne Dispersal of Heavy Metal Contaminants." Presented at the 6th National RCRA/Superfund Conference and Exhibition on Hazardous Wastes and Hazardous Materials, New Orleans, LA.

Thorsen, J.W. 1985. "Site Investigations and Removals—Lessons Learned Over the Past 3 Years." Superfund Update: Cleanup Lessons, Arlington, VA.

Thorsen, J.W. 1984. "G&H Landfill: A Case Study of Chemical Migration Occurring 10 Years After Closure." 1984 Hazardous Materials Spills Conference, Nashville, TN.

Thorsen, J.W. 1983. "Methodology for the Classification of Possible Hazardous Waste Sites." Municipal and Industrial Hazardous Waste Conference.

Thorsen, J.W. 1982. "Impact of Chromium Waste Spills in Glacial Till Soils." Presented at the 12th Annual Systems Symposium, American Defense Preparedness Association, Langley Air Force Base, Virginia.

Thorsen, J.W. 1982. "PCBs at Superfund Sites: Remedial Action Experiences." Presented at the 3rd National Conference of Uncontrolled Hazardous Waste Sites, Washington, DC.

Thorsen, J.W. 1982. "Containment Strategies to Manage Abandoned Hazardous Waste Sites in a Cost-Effective Manner." Presented at the 5th Annual Madison Conference of Applied Research and Practice on Municipal and Industrial Waste, Madison, NJ.

Thorsen, J.W. 1982. "Bruin Lagoon: Remedial Cleanup of Hazardous Waste Sites Under Superfund." Presented at the 14th Mid-Atlantic Industrial Waste Conference, College Park, MD.

Qualifications Summary

- More than 27 years of design experience in the water, wastewater, and solid waste fields, including resident engineering and construction supervision; plant operation surveillance; and water quality monitoring for municipal water supply and sewage collection and treatment facilities. Projects have varied in size from \$10,000 to \$14 million and in length from 1 week to 2-1/2 years.
- Development of groundwater sources.
- Five years of experience in cradle-to-grave HTRW projects nationwide and worldwide.
- Extensive working knowledge of QC-related items of CERCLA, RCRA, NEPA, SARA, CWA, and CAA.

JOSEPH S. WASIUK, P.E.

Registration

Registered Professional Engineer in the State of New Hampshire

Fields of Competence

Water and wastewater system design; treatment operation and construction management; and groundwater hydrology.

Credentials

B.S., Hydrology—University of Arizona (1971)
A.S., Electrical Engineering—Wentworth Institute (1965)
Graduate Studies, Environmental Engineering—University of New Hampshire (1975-1978)
Field Sampling Training, State of New Hampshire (1971); for HTRW Sites, WESTON (1999)
Construction Quality Management for Contractors, U.S. Army Corps of Engineers (1994)
Site Health and Safety Coordinator Course, OSHA 29 CFR 1910.120(e)(4), WESTON (1992)
40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3), WESTON (1991)
8-Hour Hazardous Waste Refresher Course, OSHA 29 CFR 1910.120(e)(8), Institute for Environmental Education, Inc.
New England Water Works Association
New Hampshire Water Works Association
American Water Works Association (AWWA)

Employment History

1978-Present WESTON
1971-1978 New Hampshire Water Supply and Pollution Control Commission Water Supply Division

Key Projects

Capping Landfill B, Westover ARB, USAF, Chicopee, MA, Site Manager. Oversight of excavation of hazardous waste from

Key Projects (Continued)

.89 acres of wetland. Remedial activities include regrading; installing geonet composite cap, gas venting wells, and lines; and revegetation of wetlands.

Remediation Services, Confidential Client, New Jersey, Site Manager (2/99-6/99).

Remediation of \$5.5 million site for excavation of contaminated soil. Responsible for the day-to-day operations of the project to include excavation, loading, and transport of the contaminated material to an incinerator. After incineration, returned material to the site, and refilled and regraded utilizing the original material, along with top soil to make up for the missing volume.

Remedial Action, Former Weldon Spring Ordnance Works (WSOW), St. Charles, MO, U.S. Army Corps of Engineers (USACE) Toxic and Hazardous Waste Management Board, Kansas City District, Site Supervisor. Responsible for site supervision for the excavation and removal of over 85,000 ft. of wooden pipeline previously used to transport explosives wastewater plus the removal of over 20,000 yd³ of TNT and DNT contaminated soils. Both the pipeline (after being shredded) and soil were incinerated on site in WESTON's TIS-20 incinerator.

1.5 Million Gallon Wastewater Treatment Facility, NH, North Conway Water Precinct, Resident Engineer. Responsible for the construction of a pumping station and total treatment facility including Barden flow process, clarifiers, sludge holding tanks, UV disinfection and rapid infiltration basins. Total project cost approximately \$14 million.

Old O-Field Groundwater Remediation Project, Aberdeen Proving Ground, Maryland, U.S. Army Corps of Engineers, Baltimore District, Site Manager. Responsible for the development, maintenance, implementation, and verification of the Construction Quality Control Plan. Established and maintained the audit/corrective action program for field activities, quality training, QC inspector certifications, and the calibration program for environmental measuring equipment. Managed the QA/QC of all subcontractor work, estimate approvals, change order control, and plant startup and operation.

Oceanside Landfill Capping and Closure, Hempstead, NY, Town of Hempstead, Resident Engineer. Provided QC review/oversight for the capping and closure of a landfill, which consisted of grading and adding a protective layer over 17 acres, installing a geocomposite liner, 1 foot of liner protection material, and ½ foot of topsoil and hydroseeding. Reviewed shop drawings, provided QA/QC of materials and workmanship, oversaw the activities of 25 personnel, prepared and processed monthly pay estimates, conducted bi-weekly meetings involving subcontractors, the owner, and NYSDEC. Reviewed certified payrolls, oversaw the preparation of as-built drawings, and developed the QA/QC report.

New Sanitary Landfill and Leachate Pretreatment Facility, New York, Sullivan County, Resident Engineer. Responsible for the construction of a leachate collection system around the existing 40-acre landfill, the construction of the first two of five cells (15 acres) of a double-lined composite landfill using 60 mil high-density polyethylene (HDPE) and 24 inches of 10⁻⁷ cm/sec clay as the secondary liner and 60 mil HDPE and 18 inches of 10⁻⁷ cm/sec clay for the primary liner. The leachate from the new landfill and the existing landfill is pumped to a pretreatment plant, also constructed as part of this project, before being discharged to the Monticello wastewater treatment plant. Adhered to extensive quality assurance/quality control (QA/QC)

Key Projects (Continued)

procedures and kept documentation to meet the stringent requirement of the New York State Department of Environmental Conservation (NYSDEC) Part 360 regulations.

Water Supply System Upgrade and Improvements, Qena to Hurghada, Egypt, Design Engineer. Evaluated current transmission system and pumping stations from the Nile River to the Red Sea (135 km) including 15 pumping stations from 60/litres per second (lps) pumps to 200/lps pumps. Replacement of pumps and transmission lines to upgrade capacity for this rapidly growing tourist area.

Sewer Collection System, Design and Resident Engineering, New Hampshire, City of North Conway, Designer/Resident Engineer. The new collection system encompasses the entire town and replaces the septic tanks and leach field. The construction of this project had time limits imposed on it by the New Hampshire Department of Transportation (NHDOT) that require the contractor to work 24 hours a day to install the more than 4 miles of interception sewer in one of the most traveled roads in the state.

Water Supply System Upgrade and Improvements, New Hampshire, City of Concord, Designer/Resident Engineer. Responsible for improvements including the design and construction of four water storage tanks (three 2 million gallon-per-day (mgd) and one 0.4 mgd, three new pumping stations with capacities up to 10 mgd, rehabilitation and upgrading of a fourth pumping station to 10 mgd capacity, and the installation of more than 5 miles of new water mains.

Interceptor Sewer Design and Resident Engineering, New Hampshire, Town of Belmont, Designer/Resident Engineer. This facility consisted of 4.5 miles of gravity and force main sewers of a pumping station and four river crossings. This project was part of the Winnepesaukee River Basin Project, which transported the sewerage from the Town of Belmont to the main interceptor in Tilton for treatment at the main plant in Franklin.

Sewage Abatement, New Hampshire, Town of Derry, Resident Engineer. This project included the construction of a pumping station in Derry to pump the treated waste through more than 9 miles of force and gravity sewers to the Merrimack River in Litchfield. Responsible for the construction of the force main including the jacking of Interstate I-93 as well as Route 102 and the installation of a diffused header outfall in the Merrimack River.

Industrial Pollution Abatement Project Construction, Cairo and Alexandria, USAID/Government for Industry of Egypt, Assistant Chief Engineer. This \$14 million project for the Government for Industry of Egypt was USAID-funded and involved 10 separate abatement projects for five industries. The projects ranged in scope from new sewer lines and pumping stations, to upgrade of wastewater treatment facilities to a mercury removal and recovery system.

Water System Upgrade, New Hampshire, Town of Lincoln, Designer/Resident Engineer. Responsible for improvements including the construction of two water storage tanks (one 0.5 mg and one 1.5 mg), a pumping station, and the installation of more than 3 miles of new water mains.

Key Projects (Continued)

Sewer Line Extensions, New Hampshire, Multiple Clients, Designer/Resident Engineer.

These projects were performed for both municipal and private developers, including the Towns of Franklin, Lincoln, Meredith, Pembroke Sewer Commission, Woodsville Fire District, and the Loon Mountain Development and Water Valley Estates.

Meredith Center Water System, New Hampshire, New Hampshire Department of Environmental Services (NHDES), Designer/Resident Engineer. This project involved extending the water distribution systems more than 4 miles from Meredith to Meredith Center to supply drinking water to 54 homes and a trailer park whose wells were contaminated or in danger of contamination from a gasoline spill.

Water System Improvements, New Hampshire, Multiple Clients, Designer/Resident Engineer. Performed design and resident engineering for improvement of new water systems for developers, including the Towns of Warner, Pembroke, Littleton, Lincoln, Waterville Valley, Village at Loon, Waterville Estates, Swain's Lake (Barrington), and Whittemore Shores (Bristol), NH; Bernardston and Shelburne Falls, MA; and Saddleback Mountain (Rangeley), ME.

Water Supply Distribution System, New York, New York State Department of Environmental Conservation (NYSDEC), Data Collection/Cost Estimating Team Member Visited 50 water utilities to collect data on water supply distribution systems. Evaluated cost data to develop distribution system rehabilitation, replacement of mains, pumps, and storage costs.

Cost Data Development, Various Locations, Multiple Clients, Engineer. Evaluated cost data of 10 largest counties in New York to develop distribution system rehabilitation, replacement of mains, pumps, and storage costs for 5 largest purveyors to comply with Safe Drinking Water Act (SDWA).

Water Studies, New Hampshire, Multiple Clients, Engineer. Developed water studies, including current use assessment and projections of future needs with corresponding designs for system additions and modifications for the following New Hampshire towns or water precincts: Meredith, North Conway, Littleton, Campton, Penacook-Boscawen, Bartlett, Contoocook, and Farmington.

Pumping Station Redesign, New Hampshire, City of Concord, Design Engineer. Redesign of pumping station No. 4 to upgrade and modernize a 10-mgd facility.

Water Storage Tank Design, New Hampshire, Town of Lincoln, Design Engineer. Design of a 500,000-gallon water storage tank with associated pump stations and transmission mains for Lincoln, NH.

Water Supply Pumping Station Design, New Hampshire, City of Concord, Design Engineer. Design of a 10 mgd auxiliary water supply pumping station and 10,000 ft of transmission mains.

Sewer Line Extension Designs, New Hampshire, Multiple Clients, Design Engineer. Design of sewer line extensions for Woodsville Fire District, Pembroke Sewer Commission, and the Town of Meredith, NH.

Key Projects (Continued)

Water Distribution System Design, New Hampshire, Waterville Valley, Design Engineer. Design of a water distribution system and storage facilities for Waterville Valley, NH.

Sewage Abatement, New Hampshire, City of Derry, Resident Engineer. Project involved a \$2.6 million sewage abatement project, including a pumping facility and 9 miles of force mains for Derry, NH.

Well Design, Rahns, PA, Village of Rahns, Design Engineer. Design of pumping station, water storage tanks, and connecting mains and distribution system to replace 100 wells contaminated by a trichloroethylene (TCE) spill.

\$14 Million Industrial Pollution Abatement for 10 Industries in Cairo and Alexandria, Egypt, USAID and the Government for Industry for Egypt, Assistant Chief Engineer.

Computer Distribution Analysis and Recommendations for Necessary Improvements, Edwards Air Force Base (AFB), CA, U.S. Department of Defense (DOD). New well pumping station and construction of mains.

Development of New Groundwater Supply, Pumping Station, and Associated Mains, Massachusetts, Bernardston Fire Precinct.

Superfund Site Water Treatment Facility Design, Barrington, NH, U.S. Environmental Protection Agency (EPA), Design Engineer. Performed QC of the design of a water treatment facility pumping station, and distribution system to supply potable water to 70 houses whose wells had been contaminated by a hazardous waste dump.

Superfund Site Water Line Extension Design, Concord to Bow, NH, EPA, Design and Resident Engineer. Design and resident engineer for water line extension from Concord to Bow to supply water to homes whose wells were contaminated with hazardous waste.

Sewer Line Extension Design, New Hampshire, Woodsville Fire District, Pembroke Sewer Commission, and the Town of Meredith, Design and Resident Engineer.

Development of New Groundwater Supplies With Associated Pumping Station and Connecting Mains, New Hampshire, Town of Warner.

RICHARD M. ZOPPEL

Qualifications Summary

- Seventeen years of management experience in the private and government construction industry; contract negotiations, scheduling, budget management, and inspections.
- Site manager for hazardous waste remediation and site health and safety officer coordinator for decontamination of radiation structures, PCB and drum excavations, and UST removals and replacements.
- Supervised construction of micro pilings and piers with specialized equipment, as well as associated construction.
- Five years of HTRW project experience.
- Fifteen years of experience with cradle-to-grave activities.
- Thirteen years of experience supervising cost reimbursable projects.

Registration

Certified Health and Safety Officer, WESTON (1990)
Certified Fiberglass Tank Installer, Owens Corning (1990)
Underground Storage Tank FRP Certified Inspector and Installer

Fields of Competence

Construction management for civil, structural, hazardous waste, and environmental engineering projects.

Credentials

A.S., Mechanical Engineering—Penn State University (1973)
Drain Safety Management Seminar
40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3)
8-Hour Bloodborne Pathogens Training Course, OSHA 29 CFR 1910.1030
First Aid/Adult CPR, American Red Cross
10-Hour Construction Safety and Health, OSHA 29 CFR 1926
Site Health and Safety Coordinator's Training, OSHA 29 CFR 1910.120(e)(4)

Employment History

1990-Present	WESTON
1988-1990	R.M. Zoppel Company Construction Management
1986-1988	Castle Point Corporation
1984-1986	Pulte Home Corporation
1978-1984	Roger Bullivant of Texas, Inc./Pierco, Inc.
1976-1978	Marvic Allstate
1976	Weist Construction

Key Projects

GE/Housatonic River Project, Pittsfield, MA, U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE), Project Superintendent.
Currently directing all Pittsfield field activities at the GE/Housatonic River project for coordinating multimedia sampling for investigation of polychlorinated biphenyls (PCBs) contamination in the river and associated areas. Manages 15 to 23 personnel conducting pore water, geophysical, biological, storm,

Key Projects (Continued)

soil, sediment, and groundwater sampling. Interface with client management, health and safety regulators, EPA, state, and local regulatory representatives. Has managed all field activities since startup. Organized, collected, and analyzed 30,000 soil, sediment, biological, and water samples.

Lead/Arsenic PCBs Remediation Cleanup, Maryland, Confidential Client, Site Manager/Safety Officer. Responsible for sampling, testing, and excavation of contaminated soil containing unexploded ordnance (UXO) and chemical warfare material (CWM), and coordinated sampling and analysis. In charge of the health and safety issues on-site. Located 26 bottles/vials of CWM and 87 UXO ranging from 20 to 150 millimeters. Developed a rubber cutting edge for excavating UXO and glassware. Interfaced with client's project management, health and safety, and EPA representatives.

Remediation of PCB-Contaminated Soil from Natural Gas Pipeline Stations, Eastern and Western Pennsylvania, Confidential Client, Client's Representative, Site Leader. Completed the 7-year project; responsible for all phases of remediation, including the implementation of health and safety plans, work plans, schedules, quality controls; coordination of remediation, disposal, analytics, and sampling with station operations; interface with client, Pennsylvania Department of Environmental Protection (PADEP), EPA, WESTON; sampling and testing program during remediation of 9,000 tons to 68,000 tons of PCB-contaminated soils; directed and coordinated the excavation of contaminated soils around 1" to 30" high pressure gas lines, valves, and associated equipment. Supervised removal of 6,000 cubic yards (yd³) of PCB-contaminated sediment and remediation in two 40-ft wide rivers, for 1,000 and 2,000 ft long reaches, respectively. Diversion of the first river was accomplished through construction of a diversion dam, pumping the river, and temporary rechannelization. The second was diverted using curtain wall technology. The sediment was dredged and shipped to an off-site area and the river banks were revegetated and restored. Coordinated with EPA, state oversight, large excavation contractor with 7 to 10 crews, and 2 to 4 site survey crews. Project completed 15% below estimated budget.

Remediation of Amylphenol and Benzene Drums, Detroit, MI, Atochem, Construction/Site Manager. Responsible for all phases of 900 drum remediation, including: excavation, overpacking, temporary storage, transportation, and Level B operation; coordinated remediation and interface with the client, oversight representative, local government, fire department, and State DEP; completed the project within the budget and schedule. Special requirements included the installation of a 150-foot movable building and ventilation system. Site was located within 100 ft of residential area.

Road Construction, New Jersey, Pierco, Site Manager. Responsible for the construction and reconstruction of state and township roads and highways.

Remediation of PCB-Contaminated Soil from Natural Gas Pump Station, Uniontown, PA, Confidential Client, Client's On-Site Representative. Responsible for all phases of remediation, including implementation of health and safety plans, work plans, schedules, and quality controls; coordination of remediation, disposal, analytic, and sampling with station operations; interface with client, Pennsylvania DER, EPA, and WESTON; and removal of

Key Projects (Continued)

57,000 tons of PCB-contaminated soil.

Remediation of PCB-Contaminated Soil from Natural Gas Pump Station, Windridge, PA, Confidential Client, Client's On-Site Representative. Responsible for all phases of remediation, including implementation of health and safety plans, work plans, schedules, and quality controls; coordination of remediation, disposal, analytic, and sampling with station operations; interface with client, Pennsylvania DER, EPA, and WESTON; and removal of 9,000 tons of PCB-contaminated soil.

Construction, Jefferson, OH, Transthermal, Site Manager. Responsible for the various mobilization preparation activities necessary to set up the TIS-5 High Temperature Incinerator, including review of foundation plans; scheduling, inspection, and installation of concrete foundations for the incinerator; and conducting site health and safety program and air monitoring activities.

Radiation Remediation, Mechanicsburg, PA, U.S. Navy, Ships Parts Control Center, Site Manager. Responsible for all phases of remediation, including mobilization scheduling, execution of drilling operations, excavation of buried radiation-contaminated instruments, sampling, disposal, implementation of health and safety plan, site security, and site containment during remediation; direct communication with U.S. Navy officials and WESTON.

Picatinny Arsenal Remediation, Dover, NJ, USACE, Site Manager. Responsible for decontamination, removal, and dismantling of 11 aboveground tanks (8,000 to 12,000 gallons) containing explosive materials. Conducted site health and safety program, and air monitoring during operations.

Tank Removal and Replacement, Allentown and Harrisburg, PA, PP&L Services Facility, Site Manager. Project involved multiple sites for removal and replacement of underground gasoline and diesel storage tanks and related facility service island. Responsible for scheduling excavation, decontamination, and disposal of tanks, ordering supplies, and directing construction crews.

Construction, Oxford, NJ, Castle Point Corporation, Construction Manager. This \$54-million residential construction project involved all phases of construction from 45-acre site improvements to construction of 195 units. Conducted contract negotiations, construction, scheduling, budget management, public relations with two officials, and obtained various construction permits. Project included construction of a water system involving two water storage towers, wells, pumping station water lines, inspections, and budget management.

Construction, Forth Worth, TX, Pulte Home Corporation, Site Manager. Performed quality control inspections and warranty services for construction of 200 homes per year in three project locations.

Construction, Fort Worth, TX, Roger Bullivant of Texas, Manager. Responsible for planning startup of micro piling and small diameter pier operation. Directed and supervised micro piling preparation, installation, and associated construction involving commercial and residential facilities; also included public relations with local officials and engineers.

Key Projects (Continued)

Construction/Remodeling, Various Locations, R.M. Zoppel Company, Owner. Managed commercial and residential new construction and remodeling/restoration.

Construction/Redesign, Verona, NJ, Marvic Allstate, Engineer. Assisted in redesign, survey, and construction of city wastewater treatment facilities.